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SANITARY SURVEY
OF
SKOWHEGAN MAINE.

WA
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1923
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Phelvel, M.S.,
1924.

A well presented and
fairly adequate survey. The
chapter on statistics is not
very good. The population,
however, is only about 5,000.

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HISTORY OF THE TOWN OF SKOWHEGAN.

The Town of Skowhegan, County of Somerset, State of Maine, lies on the north and south sides of the Kennebec River. It is bounded on the north by the towns of Cornville and Madison, on the east by Hartland and Canaan, on the south by Canaan and Clinton and on the west by Merridgewick.

The territory was originally a part of Canaan, but in the year 1823 was incorporated under the name of Wilburn. This name it bore until 1836 when the efforts of many people, who wished to preserve the ancient name, succeeded, and it was called by its present name Skowhegan. Skowhegan, pronounced by the Indians Skooheegan, signifies "a place to watch." It was formerly a famous place for a colony of Kennebec Indians, living some eight miles up the river to the north to catch salmon, and other fresh water fish, which were accustomed to rest themselves behind the rocks and in the eddies in order to recruit their energy before making efforts to ascend the falls.

Benedict Arnold, in leading the deserting troops into Canada, at the time of the Revolution, camped for several days in Skowhegan, the delay caused by the rapid water, and the falls at this point., necessitating carrying his boats and supplies around this hazardous part of his journey.

The first settlers in this community were farmers, trappers, and lumbermen, who, perceiving the possibilities of development of the water power and the fertility of the soil, established themselves in rude but sturdy log cabins. This primitive settlement prospered, grew, and gradually attracted others. Land was cleared and tilled, and more substantial buildings erected, the latter being made possible by the construction of a saw mill on the island.

The agricultural products for the year 1837 were corn 2212 bu., wheat 4506 bu., rye 579 bu., oats 13201 bu., beans 321 bu., peas 913 bu., barley 1226 bu., potatoes 37275, turnips 715, apples 1865, wool 5216 lbs, maple sugar 720, pork 90400, beef 15550, butter 19555, shadocks 6260, hay 2084 tons, cider 222 bbls. There were 208 horses, 15 colts, 145 oxen, 341 cows, 349 other cattle, 2323 sheep, 379 swine, There were 26 chaises, 78 horse wagons, 1 coach, 2 grist mill, 2 saw mills which sawed 50,000 feet of boards, and 1 tannery with 10 vats, \$15350.00 stock in trade, \$3000.00 money loaned, and \$9100.00 bank stock.

In 1841 the real estate was valued at \$183970. and in 1845 at \$196405.

In 1843 there was a more extensive report made which showed that the town contained an area of 19071 acres, of which 48 were covered with water, 524 occupied with roads, 2913 of waste land, 5673 of improved land, 3000 of woodland, 2036 of pasture, 12 of natural meadow, 2200 of mowing, and 1800 of tillage. The value of real estate was \$246505. and all taxable

presently \$35016. There were 337 polls, 18 stores, shops etc., and 15 other buildings. The town by taxes raised \$1000. for town affairs, \$2250 for roads, and \$600. for schools.

At that time the falls at Shoshone would strike the lover of beauty with delight. Situated in the midst of the river is a high, rocky, wood covered island, sprinkled with a few pleasant residences, and the water after meeting this obstruction, divide and pass in clear, they are precipitated over a fall of $22\frac{1}{2}$ ft.

Today Shoshone is a prosperous and enterprising town. It is situated in the central part of the state, on the Kamehameha River. It is the terminal station on a branch of the Maine Central Railroad, from Waterville. It has trolley connections with Madison, ten miles to the north, and is connected by stage with Oxbow, Athens, and other points. Its connection with these towns make it a business center, as it is the nearest place where adequate shopping facilities are to be found. It is a manufacturing and farming center as well as a trading center. The industries are various, shoes, woollens, paper, pulp, lumber, grains, canning. These industries are for the most part located in the center of the town adjacent to the river. At present the water power is exclusively controlled by a large electric power plant, so that with the use of electric power, the industries are beginning to expand.

There are two small privately owned hospitals of about 10 beds each to which the better doctors of the town take their patients.

The valuation of the town for the year 1904
is as follows:

Real estate, residential--- 2,526,380.

" " non residential---1,307,613.

Total real estate-----3,833,993.

Personal estate, resident,--- 883,855.

" " , non resident-362,475.

Total personal estate,-----1,246,330.

Grand total, 5,080,323.

GLACIATION.

By the nature of the geological formation it may be deduced that Maine is one of the glacial parts of the United States. Various rolling hills bear witness to the passage of the glacier. The changes in the extent and form of lakes and river beds are shown by the rock formations of the vicinity, and the nature of the deposits which were brought down from the mountains to the valleys. The northern portion of the state belongs to the Devonian period, the greater portion consists largely of fossiliferous strata. Granite, gneiss and marble occur in quite large quantities. Striated and boulders are found universally all over the state. The soil shows likewise the effects of the glacial period. Kames run in a general northerly and southerly direction.

TOPOGRAPHY.

The northern part of the state drains into the St. John River, and the southern part into the Kennebec, Penobscot, and Androscoggin Rivers.

Grayhock lies to the north and to the south of the Kennebec River which at this point flows in a general southerly direction. The land drains into this river directly, and by means of several small streams, the largest of which is known as the Wassumpissett Stream.

Grayhock is situated in the 44th degree 40 min. north latitude, and is 100 feet above sea level.

TOPOGRAPHY

STATE OF MAINE

FREDERICK W. PLAISTED, GOVERNOR

F. E. MACE, EDWARD P. RICKER, J. M. McNULTY, E. C. JORDAN

STATE WATER STORAGE COMMISSION

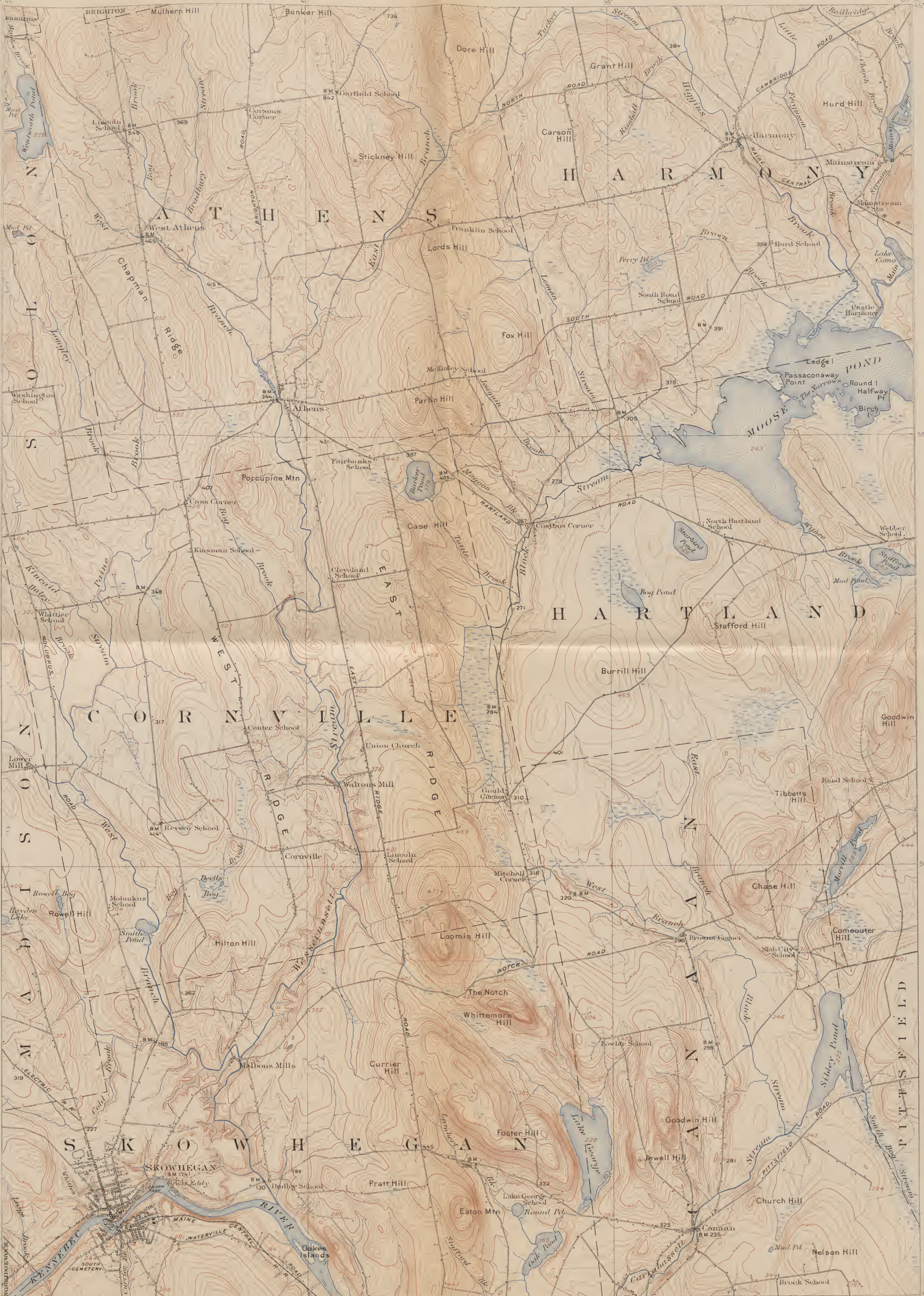
CYRUS C. BABB, CHIEF ENGINEER

MAINE

(SOMERSET COUNTY)

SKOWHEGAN QUADRANGLE

U.S. GEOLOGICAL SURVEY
GEORGE OTIS SMITH
DIRECTOR



R. B. Marshall, Chief Geographer.
Frank Sutton, Geographer in charge.
Topography by Hersey Munroe and Olinus Smith.
Control by E. L. McNair and K. E. Schlachter.
Surveyed in 1912.
SURVEYED IN COOPERATION WITH THE STATE OF MAINE.

Smith
Munroe



interval 20 feet.

mean sea level.

0 1 2 3 4 5 Miles

0 1 2 3 4 5 Kilometers

Edition of June 1913.

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN
DECLINATION 1912.

SKOWHEGAN

CLIMATE.

This portion of Maine has a very wide range of temperature, from 35 degrees below zero in the winter time to 90 degrees above in the summer time. There is an abundant fall fall in the summer, suitable for farming, and a very heavy snow fall in the winter. The temperature is very variable even during a single day often varying 30 degrees in a few hours. This is in part responsible for the high incidence of upper respiratory infections in this vicinity.

POPULATION.

The last census was taken in 1925, and shows a population of 3981. The figures for the constitution of the population are not available for the town alone, being compiled only for the whole state.

ORGANIZATION OF THE HEALTH DEPARTMENT.

The health department of Snowhogan is very loosely organized, and its activities are not directed by a central head. The Public Health Work is carried on by various individuals, without any great degree of co-operation, for the most part each individual working separately along self directed lines, and being responsible only to the select men in the way that all municipal activities are so guided. The personnel of the Health Department includes:-

- (1) Health Officer.
- (2) School Physician.
- (3) School Nurse.
- (4) District Nurse.
- (5) Meat Inspectors (2).
- (6) Milk Inspector.
- (7) Town Clerk.
- (8) Select Men.

Activities of the Health Department.

(1) The Health Officer is appointed by the Select Men, And works in conjunction with the State Department of Health. He is not a full time official, and his remuneration consists of fees which he is allowed in the performance of various special duties, and which are paid by the town. Five hundred dollars per year is appropriated for his use, of which amount

only \$293.60 was expended, \$159.83 being the total fee to the Health Officer for the year. His activities are for the most part:-

(a) Reporting infectious diseases in a weekly report to the State Department of Health, thereby consolidating data sent to him from the local physicians.

(b) Quarantining and funigating at the conclusion of the quarantine of all houses in which there have been cases of certain specified diseases.

(See later under Infectious Disease.)

(c) Answering nuisance calls, investigating the conditions against which complaint has been made, and seeing that said conditions if undesirable are improved. The nuisances for the most part have consisted of earth closets and sink drains.

(2) The School Physician is appointed by the Select Men. Once a year he examines the school children in all of the various schools in the town. He is assisted by the School Nurse and the details of the examination will be taken up later, under a special heading. He sends out notifications through the agency of the School Nurse to all the parents whose children have been found to be defective. It is not a part of his duty to treat such children, but only to make the findings of his examination known.

All children who have been excluded from school because of sickness must visit the School Physician and obtain a permit before they are allowed

to go back to school.

The School Physician is paid \$400.00 per year by the town for his services.

(3) The School Nurse is supported by the local Red Cross and is a full time official. She assists the School Physician in examining the school children, and makes out the reports to the parents. She follows out the results obtained, and checks up on the treatment and resulting improvement.

Besides this she gives talks to the children and to the mothers at intervals by way of health education, and in times of epidemics of infectious disease she distributes appropriate literature.

(4) The District Nurse is supported by the Metropolitan Life Insurance Company, and in part by various local philanthropic organizations. Her services may be summoned then by all residents of the town whether they be policy holders or not. She visits any person who calls her but does not make a second call until a physician has been summoned. Her services are essentially for the acutely ill. Cases of minor indisposition are turned over to the care of the family after the first visit. In chronic cases it is not her duty to make an unlimited number of visits, and as a rule six visits to one person for any one ailment is taken as the maximum. The length of the visits are as a rule not greater than one hour but in seriously acute cases where the patient is too sick

to be removed to a hospital she may stay for twenty-four hours. More than one visit a day is sanctioned only in extreme cases. She may make one visit a month for pre-natal instruction and eight consecutive post-natal visits as well as a ninth visit at the end of five weeks. She may care for the newborn baby, dressing the cord etc. during the period that the mother is under post-natal care. Her duties then are varied and consist of lending a helping hand where it will do the most good.

(5) The meat inspectors, two in number, receive fees from the owners of the meat which they inspect. It is their duty to inspect all meat which is of domestic production and which is shipped away for outside consumption.

(6) The Milk Inspector is appointed by the Select Men and receives from the town funds one hundred dollars a year for his services. He works in conjunction with the State Milk Inspector, and together they visit and score all the farms within the town limits which produce milk either for retail or wholesale traffic. They make recommendations and enforce a satisfactory standard of cleanliness both for the stock and the equipment. The stock is tuberculin tested to keep the herds free from tuberculosis. The milk from the various farms is tested and if unsatisfactory physically or chemically the cause is sought out and the causative condition remedied. If the owners refuse to conform to the recommendations of the milk inspector, then steps

are taken to enforce them.

(7) The Town Clerk, as a part of his duties, has charge of the recording of vital statistics, for which he is paid in fees by the town. During the last year he has received for the recording of births, deaths, and marriages, fees to the amount of \$131.75.

(8) The Select Men supervise the policing of the streets, vacant lots, etc. A plot of land is rented for a dumping ground and all rubbish is hauled there and dumped. For this purpose they expended in the past year \$374.39 of the town's money.

Rental of dumping ground	\$150.00
Hauling rubbish	91.50
Labor	33.50
Misc.	99.39
Total	<hr/> \$374.39

Budget for the year ending Feb. 20, 1923.

Expended.

Health officer

(a) Official fees	\$159.83
(b) Groceries and provisions	30.07
(c) Medicines and Medical attendants	93.00
(d) Miscellaneous	10.70

Vital Statistics

(a) Births, marriages, and deaths	\$131.75
-----------------------------------	----------

School Physician

(a) Salary	400.00
------------	--------

Sanitation

(a) Renting ground for dump	150.00
-----------------------------	--------

(b) Hauling rubbish	91.50
---------------------	-------

(c) Labor	33.50
-----------	-------

(d) Miscellaneous	99.39
-------------------	-------

Milk Inspector

(a) Salary	100.00
------------	--------

Total	<u>\$1299.74</u>
-------	------------------

This total of \$8299.74 spent for the benefit of Public Health represents a per capita expenditure of approximately \$0.22 per anum. Dr. W. H. Parks of the New York City Health Department estimated in 1911 that the per capita expenditure per year for the protection of public health should be from \$0.50 to \$1.00. With the increased wages and cost of materials following the war this figure must necessarily be increased. Likewise in a small community the ammount of health protection which can be obtained from a given per capita expenditure is necessarily less than for a large city. Fox C. in J.A.M.A. Sept.18, 1920 estimated that a minimum health organization for a city of 10,000 people could be supported by an expenditure of \$0.75 per capita per anum. This

expenditure provided for a Health Officer, a Nurse, and a Clerk, all full time, and necessitated a yearly expenditure of \$7,500.00. This organization seems to be the minimum for adequate function in any community however small, and if applied to Skowhegan with its 5,981 people would necessitate an expenditure of approximately \$1.25 per capita per year.

It would seem to me then that by looking at the expenditure alone it is evident that the Public Health Protection of Skowhegan is insufficient.

Adequacy of the Health Department.

The Health Department of Skowhegan is very inadequate as would be expected after reviewing the salient points of its organization. In the first place the absence of full time officials (with the exception of the two nurses) especially a full time health officer is a great handicap. Any health department should have a full time man in charge whose whole time and interest is in the promotion of Public Health. In order to perform his duties adequately he should also be specially trained in his line of work, and because of the lethargy of all communities in respect to all such activities he should be a man of sufficient personality and force to carry his projects through.

The present Health Officer is a very good business man and an estimable citizen of the town, but he is untrained in public health work, and considering the

remuneration which he receives it is obvious that his main interest is in making his living, which is done almost wholly in outside business. He has neither the ability or training, time or interest then to perform his duties as health officer properly.

Then too, the activities of the Health Department, if in truth it deserves the title, is so split up among different individuals over whom the Health Officer has no jurisdiction that it would be almost impossible for him to be efficient if all the other conditions were favorable.

As has been stated above the Health Officer's main activities are the reporting of cases of infectious disease, quarantining and fumigating, and answering nuisance calls.

As will be seen later the figures for the morbidity and mortality in reportable diseases are quite unexplainably absurd, and indicate a lack of accuracy in the reporting of cases. This is due in a large part to the carelessness of the local physicians, but it is also due to the failure of the Health Officer to secure co-operation.

The work of quarantining and fumigation is done with a fair degree of adequacy, and is perhaps his most efficient work.

He has been faithful in answering nuisance calls and has secured improvement of the underlying conditions to a large degree, but he has used no initiative in discovering for himself undesirable

conditions. Certain complaints have been made to him in regard to contamination of the sources of public drinking water, for the most part earth closets in the vicinity of the aqueducts. There is a law compelling people near sewer lines to connect with them, and in most cases where complaint has been made this law would apply. However because of lack of co-operation with the town officials the Health Officer has been unable to remedy the defect in all cases.

The work of the School Physician and the School Nurse has been perhaps the most adequate considering the size and location of the town. At least their work is a great step in advance, and although their offices have not been in existence for long enough period to get the whole benefit, their activities are perhaps the most satisfactory and efficient of the group. This is not surprising however considering that the School Nurse is a full time official, and it is largely to her ability and effort that this success is due.

The District Nursing is commendable, too, and needs no particular comment here.

The Milk Inspection and the Meat Inspection is inadequate due for the most part to lack of supervision.

The Vital Statistics are reported to a central department in Augusta the capital of the state, where they are analysed. No tabulation of vital statistics is to be found in the town, and the

figures obtainable from burials for the town are scanty.

As will be seen later there are many aspects of public health which are not regulated such as the inspection of lodging houses, hotels, restaurants, provision stores, soda fountains, etc., but with the health organization now in existence little better could perhaps be expected.

WATER SUPPLY.

Water Supply

Skowhegan Water Company.

The city water is used mainly for other than drinking purposes. The drinking water comes from various aqueducts and springs, and will be taken up under a separate heading.

The city water throughout most of the year is derived from springs, the water from which is accumulated in a reservoir, a small pond, increased over its natural size by the building of a small earthen dam. The dam is 110 ft. long and 14 ft. high, and brings the capacity of the reservoir up to 1,750,000 gallons.



Reservoir.



There is a pumping station near the reservoir in which there are two pumps, electric driven, each of a capacity of 750 gallons per minute, which pump approximately 250,000 gallons per day, the average amount used daily throughout the town.



Pumping station.

The water is drawn through coarse screens which serve to keep out the large bits, but it is not filtered. It is sufficiently clear, however, from standing in the reservoir. In the pumping station the water is treated with chlorine by means of a W&T Chlorinator.

During a portion of the year, when it is dry in the hot summer months, the supply of water above described is inadequate, and consequently the supply is augmented by pumping from the river at the head of the island. This source is undesirable, in as much as the sewers draining a large portion of the town empty into the river above that point, leading to an almost certain pollution of the water. The water from the river, too, is chlorinated, but that has not prevented the city water from having a bad name, so that very few people drink it.

The water from these two sources is pumped directly into the system of pipes which supplies the town. Attached also to the same system is a pipe leading to a stand-pipe seventy-five feet high with a capacity of 320,000 gallons, located on a high hill at the outskirts of the village. The water backs up into the stand-pipe thus maintaining the desired level of pressure. The pressure is sufficient so that the town is adequately protected against fire.

The houses are furnished with meters to the extent of 99% of the houses using city water, 870 meters being the total number in use. This would indicate that the houses are pretty generally supplied with city water within the village limits.

As the water supply is almost wholly from springs there are no regulations in force to maintain the water shed in a sanitary condition, its natural filter-age through the soil being considered protection enough. As for the reservoir itself, that is protected by certain regulations:- Children are not allowed to play about its banks, no swimming or boating is allowed in its waters, and no dumping of refuse is allowed in the vicinity.

The sanitary condition of the water is tested several times a year by the State Department of Health, whenever they take a notion to do so. They make both chemical and bacteriological tests upon it and report their findings to the local water company together with their recommendations.

The Skowhegan Water Company make bacterial tests themselves each week, in order that they may know better the type of water that they are dispensing.

The Skowhegan Water Company is a locally owned corporation which supplies the town with water on a contract. By this is meant that the water used in the hydrants and in the public buildings is under contract. The bills for the water used by individuals are made out by the water company and not by town officials.

DRINKING WATER.

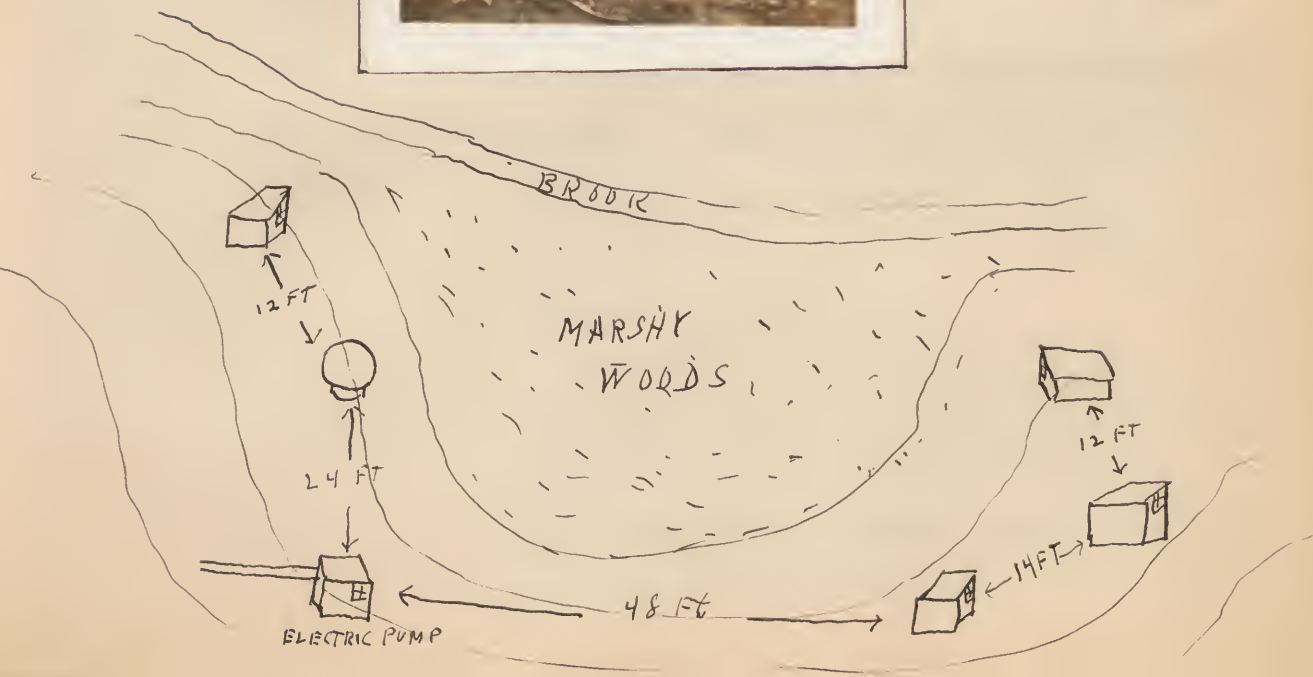
As has been said the City Water is used only to a slight extent for drinking purposes. The drinking water for a large portion of the town on the north shore of the river is derived from six small aqueduct companies. With one exception these aqueducts operate through the force of gravity. Consequently the people living farther away from the river and at a higher altitude are obliged to get their drinking water elsewhere. These people either have private wells, or buy their water from one or the other of two individuals who make a business of bottling and selling drinking water from their own private springs. The people living on the south shore of the river are in the same position in respect to drinking water as the latter group on the north shore, and they solve the problem in the same manner. A brief description of the various sources of drinking water is as follows.

Merrill Aqueduct Company.

The Merrill Aqueduct is situated in a marshy wood in the north-eastern portion of the village. It is about one quarter of a mile from any habitation, and is free from dumps, earth closets or any other sources of pollution. For its relative position in the village see map. It consists of a system of five brick and concrete wells all within a radius of one hundred feet. The wells rise from eight to

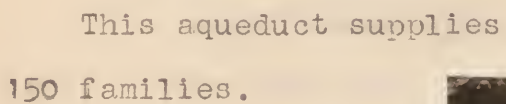
twelve inches above the level of the ground so that no surface water can run into them. Four of the wells are covered with wooden houses with galvanized iron roofing. another newer well of similar construction is covered by a slab of slate. Pipes from these wells lead under ground to a fifth house in which is an electric pump and air pressure tank which forces the water through a system of pipes to the consumers. The pump has an automatic control which maintains the desired pressure level at all times.

This aqueduct supplies six families.



West Aqueduct Company.

The West Aqueduct lies in a marshy wooded hollow and consists of five wells similar in construction to the aqueduct previously described. They are all covered with little houses with small screened windows and padlocked doors to exclude trespassers. The wells flow into a common main pipe and the water is conducted by gravity to the consumers. The immediate vicinity of the aqueduct is free from objectionable refuse but at a short distance from the aqueduct sources of pollution are to be found which from the slope of the land would appear to drain toward the wells. Fifteen houses without sewers were counted all within a distance of one eighth of a mile, the nearest of these being at a distance of about fifty yards. Ten yards from one of the wells is a dump in which some decomposing material was found. Fifteen yards from the same well was a pig pen containing dressing and swill and two fat porkers. The following map will show a scheme of the above described structures.



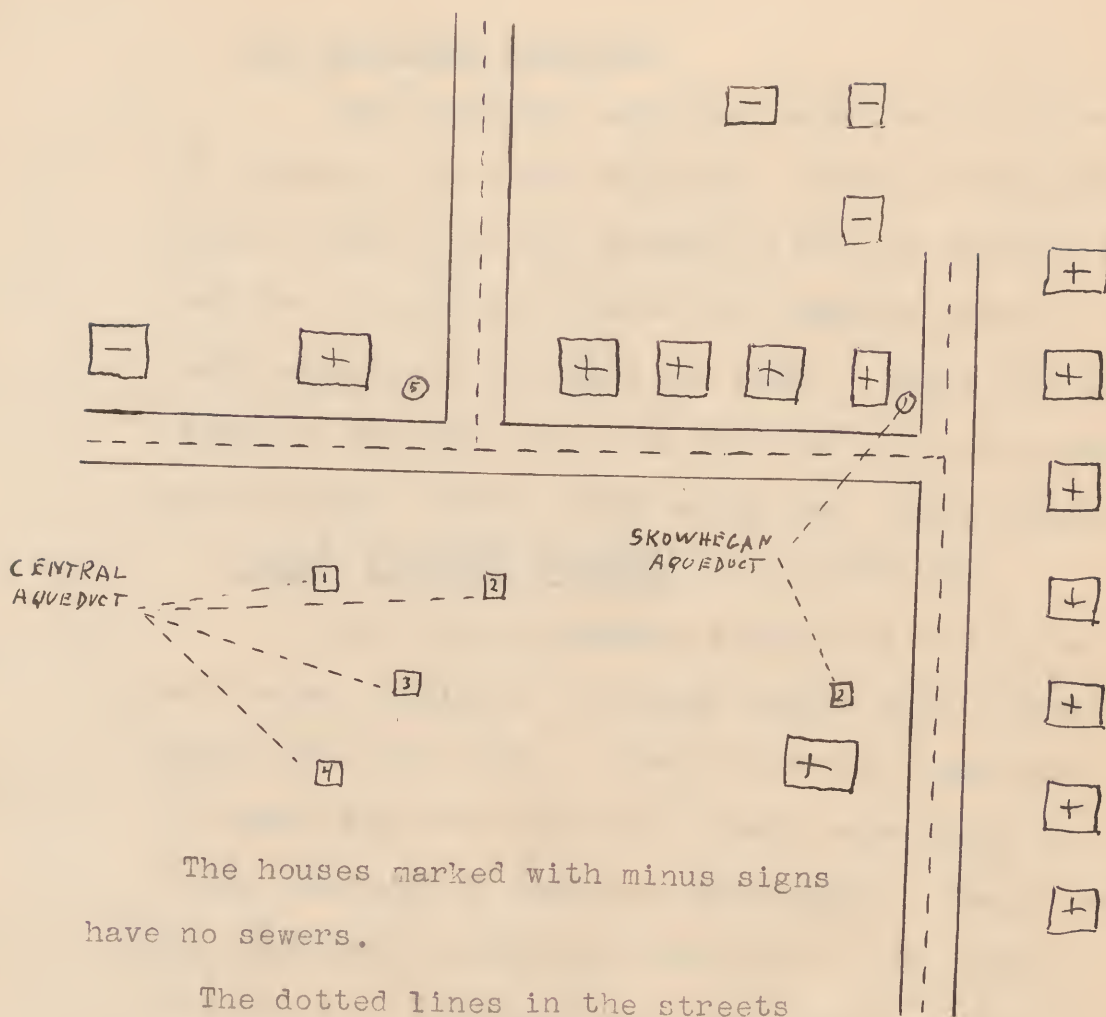
Norton Aqueduct Company.

This is a small gravity aqueduct supplying drinking water to seven houses only. It consists of a single brick and cement well extending nine inches above the level of the ground and covered by a little house with shingle roof. The door was padlocked and a small screen window provided ventilation. It is situated in the middle of a garden where ordinary garden truck is raised for family consumption only. This aqueduct is the only one of the group having a lead main, the others being piped throughout with iron.

Central Aqueduct Company.

The Central Aqueduct consists of five wells, four on the south and one on the north side of Prospect Street. The first four are covered with well houses with padlocked doors, and the fifth is covered with a metal cover which is padlocked in place. The water flows from these wells to the consumers by gravity. This aqueduct also is close to houses without sewer connections which are therefore by necessity equipped with earth closets. The following map will show the relations of these structures, as well as those of the Skowhegan Aqueduct which is next to be described and which shares the same disadvantages with the Central Aqueduct.

The Central, and the Skowhegan
Aqueduct Companies.



The houses marked with minus signs have no sewers.

The dotted lines in the streets indicate the course of sewer lines.

The central aqueduct supplies 28 families.



The Skowhegan Aqueduct.

The Skowhegan Aqueduct consists of two wells as shown in the above diagram. They are elevated about a foot from the ground so that no surface water can run in, and are covered by slabs of slate. No well houses are provided for them. There are no dumps or pig pens etc. in the vicinity, but there are several houses nearby which use earth closets.

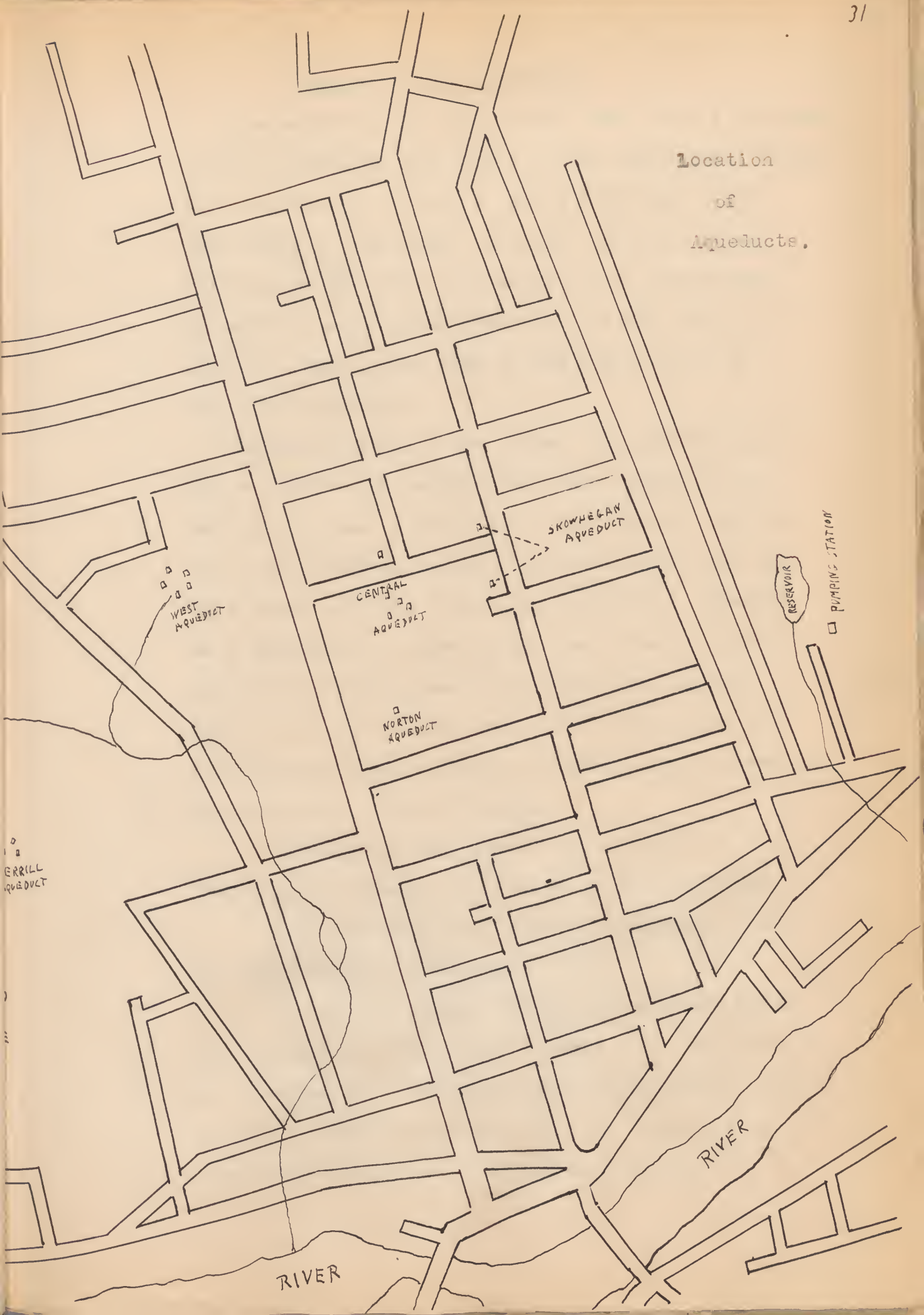
This aqueduct supplies 50 families.
Coburn Aqueduct Company.

The Coburn Aqueduct consists of two brick and cement wells in a marshy hollow about fifty yards from the road. About fifty feet away at the rear end of a house is a small shed under which is a pig pen full of dressing and refuse. There were no pigs there however at the time of the visit. The house is connected with the sewer so that is not in this case the problem of pollution with human excreta.

This aqueduct supplies 126 families.



Location
of
Aqueducts.



WEST
AQUEDUCT

CENTRAL
AQUEDUCT

SKOWHEGAN
AQUEDUCT

NORTON
AQUEDUCT

ERRILL
AQUEDUCT

RESERVOIR

PUMPING STATION

RIVER

RIVER

Review of the Aqueducts.

The aqueducts all draw their water from a stratum of sand saturated with water, which extends all along this region, at a level of about five feet below the surface. the water is clear and cold, being filtered by the sand, and purified by the process. No surface water gains admission to the various systems, even in the time of melting snow or of excessive rainfall.

Bacteriologically the waters are satisfactory, and so far do not seem to have been harmed by the various sources of pollution. Chemically, however, they show evidence of past pollution which has been well taken care of. (See Water Analysis.) However, as a safeguard it seems to me that a more rigorous enforcement of the sewer law should be applied. Very few of the houses unprovided with sewers are a sufficient distance from the sewer lines to warrant the presence of earth closets.

The dump and pig pen in the vicinity of the West Aqueduct should be cleaned up and abolished.

The lead main from the Norton Aqueduct should be replaced by an iron one.

It would be better in those cases where wells are covered by slate slabs to have them protected by well houses with padlocked doors to safeguard them against possible pollution from the tampering of inquisitive children or of ignorant adults.

Springs.

As has been said, much of the drinking water supply of the town is peddled by two men who make it a business to bottle and sell water from their own private springs.

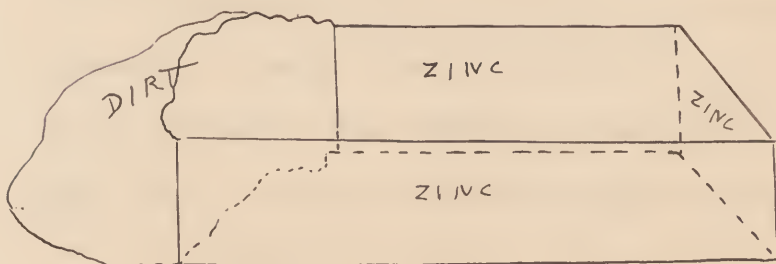
One of these springs, the Green Spring, is located in the north-eastern part of the town well outside the village limits. The spring is a natural one from which bubbles water clear as crystal. The water flows out from beneath an overhanging bank into a sandy basin, once natural, but now artificially enlarged and lined with sheet zinc on three sides, forming an enclosure about eight feet in length by four feet in breadth, whose deepest portion is about two feet. Over the spring is a rudely constructed roof about seven feet in height without sides, but fenced off in order to prevent the entrance of sheep or cattle.

The owner lives in a farmhouse near by, the nearest one, situated on the opposite side of the road at a distance of about 120 ft. This house is unprovided with sewer connections.

The ground about the spring is wet and marshy, but there is no possibility of the entrance of surface water into the spring. The overflow of the spring is a stream of water measuring about a square inch in cross section. This water flows away slowly along an indefinite path which in part accounts for th

marshy character of the vicinity. The level of the boggy ground, however, is several feet below the level of the spring which is situated on a side hill, so that there is no danger of the overflow finding its way back into the spring.

Diagram of the spring.



The water is bottled in five-gallon containers, and delivered with a horse and cart, supplying about 1000 people.



This spring should be constructed in a more workmanship manner, with brick or cement, and should be closed over the top. In addition to this a suitable spring house should be built over it which could be locked to insure privacy of the spring.

Arrangements should be provided for washing out the bottles and other receptacles in order that the bottling be done in a sanitary manner. The operator's hands should be clean at all times when he is handling the water, a precaution which in the past has not been very carefully observed.

The other spring, the Pennell Spring, is situated on the other side of the river in the opposite corner of the town, about two miles from the center of the village. It is close to a lonely, little travelled, cross road far from any habitation. This spring, too, is a natural one, enlarged and altered as follows.

The spring bed was dug out, and lined with cement except for the bottom which is sand. The top is also built over with cement except for a hole about two feet square through which the water is dipped out in pails. The cement enclosure is about seven feet square, and extends about two feet above the level of the ground, the whole being covered by a little old wooden house unpainted and weatherbeaten, with a door-way but no door.

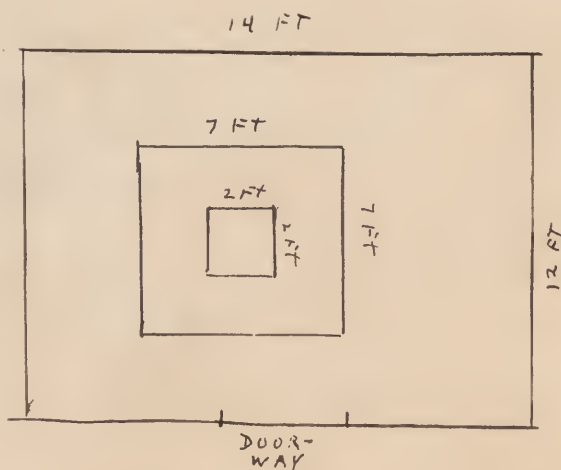


The owner bottles the water in five-gallon bottles, and distributes them with a team, six days out of the week. He puts out about 10,000 five-gallon bottles a year, supplying drinking water to about 2,000 people.

The bottles are rinsed out at the spring, and are very infrequently washed properly with hot water and soap. There is no provision made for returning the same bottles to the same families. Consequently the cleanliness of the bottles depends on the faithfulness with which the various housewives scrub them out.

In criticising the spring, I should suggest that a door be put on the well house, that adequate provision be made for the proper washing out of the bottles, and that arrangements be made whereby the operator may cleanse his hands before filling the containers.

Diagram of the spring and well house.



Water Analysis, and Criticism.

The analysis of the various waters are found below.

Bottle No.	100	103	165	50	143
Serial No.	23316	13809	23047	23520	23889
From	G.A.C.	W.A.C.	G.A.C.	G.A.C.	G.A.C.
Source	Pub tap	Pub tap	Pub tap	Spring	Pub tap
Date of collection	1/29/24	1/28/24	1/29/24	2/20/24	2/12/24
Date of analysis	1/30/24	1/29/24	1/31/24	2/21/24	2/13/24
Toler	20.0	0	10.0	30.0	0
Turbidity	20.0	0	0	0	0
Sediment	Min.	Var.	Var.	V.M.	Var.
Odor	0	0	0	0	0
Total	32.0	99.0	68.0	0	93.0
Free NH ₄ N	0.032	0.012	0.038	0.270	0.010
Nit. Alb. NH ₃	0.090	0.071	0.036	0.074	0.054
Nitrites	0.75	5.0	2.5	1.25	2.0
Nitrates	Trace	Trace	0.001	0.025	Trace
Chlorine	7.0	12.0	11.0	11.0	9.0
Hardness	32.0	73.9	59.0	30.0	42.0
Acidity	10.0	12.0	24.0	14.0	10.0
Iron	0.30	0	0.2	0	Trace
B. Coli					
presumptive	4/5	0/5	0/5	0/5	0/5
B. Coli	0/5	0/0	0/0	0/0	0/0

In reporting the B. coli the numerator represents the number of positives, and the denominator represents the number of tests made. Each test is the planting of 10 c.c. sample.

In analyzing these reports the following figures are taken as the normal.

Free NH ₃	0.015- 0.05
Alb. "	0.070- 0.35
Nitrites	0- Trace
Nitrates	0.500-1.000

These figures were obtained from the water and sewage laboratories of the State Department of Health in August.

Bottle no. 100 is an analysis of the water of the Shawhegan Water Co., the so called City Water. This water is acceptable chemically but bacteriologically it shows the presence of bacteria of an intestinal nature, not specifically *E. coli*, and not actually harmful at the present time. However their presence shows that the water has sources of pollution and that no guarantee of future innocuousness may be given. The water should either be boiled before using, or better, be more thoroughly chlorinated.

Bottle No. 103 is an analysis of the water of the West Aqueduct Co. This water shows evidence of past pollution in the high nitrate and chlorine contents. It should be looked upon as a suspicious water which at present is well taken care of by nature.

Bottle No. 165 is an analysis of the water from the Shawhegan Aqueduct Co.

No bacteria of the *E. coli* group were found in this water. It shows evidence of recent and of past pollution, however, in the high nitrite and nitrate figures.

Bottle No. 50 is an analysis of the water from the Cobscook Aqueduct Co.

No bacteria of intestinal nature were found in this sample. It shows an even greater degree of recent and of past pollution than did the

previous analysis.

Bottle No. 143 shows an analysis of the water of the Central Aqueduct Co. This water shows evidence of past pollution by the high nitrate and chlorine contents, but shows no bacteria of an intestinal nature.

The last examination of the water from the Norton aqueduct showed evidence of past but not of recent pollution.

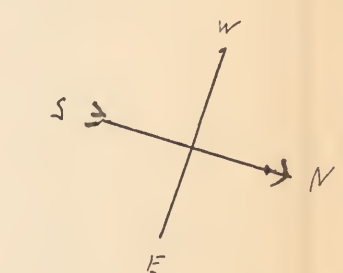
The last examination of the water from the Merrill Aqueduct showed it to be satisfactory physically, chemically and bacteriologically.

By this examination of the water supply of Showbown it is shown that the town is in great need of an adequate supply of water preferably from a single source which is pure, free from all sources of pollution, and regulated in sufficiently strict manner to keep it so. The water should be either drawn from a longer distance far away from all human habitation, or else elaborate artificial methods of purification should be instituted.



TO MADISON VIA ELECTRIC
CAR

→ TO ATHENS



MAP OF SHAWTEGAN
SHOWING SEWER
SYSTEM IN GREEN

GREAT
EDDY

EDDY BROOK

M.C.R.R.

TO WATERVILLE

CURRIE BROOK

WHITTON
BROOK

ISLAND

DAM

DAM

KENNEBEC

RESERVOIR

PUMPING
STATION

Sewage.

From the investigator's point of view the sewage system of Shogheran is beset with difficulties. The original maps of the system were destroyed in a fire about twenty years ago. As a result there are no maps in existence which show the exact location of the mains. Such information as we have been able to obtain from different sources has been pieced together and we have constructed a map which shows the approximate distribution of the sewers. Such as it is it is the best complete one in existence. The exact location of certain of the mains is not known. In these localities a person desiring to connect his house with the sewer must hunt about until he finds some old inhabitant who may remember where the sewer pipe was laid down.

The system is a gravity one, and combines the drainage of the streets with the drainage from the houses. There is no attempt to sterilize the sewage. It is merely emptied through multiple mouths into the river.

This system is owned and controlled by the town under the supervision of the select men. Up until March 12, 1923 no attempt was made to compel anyone to connect with the sewer system. At that time article No. 54 of the town warrant was passed, which reads as follows:- "To see if the town will vote to instruct the its select men compel all persons whose property abuts

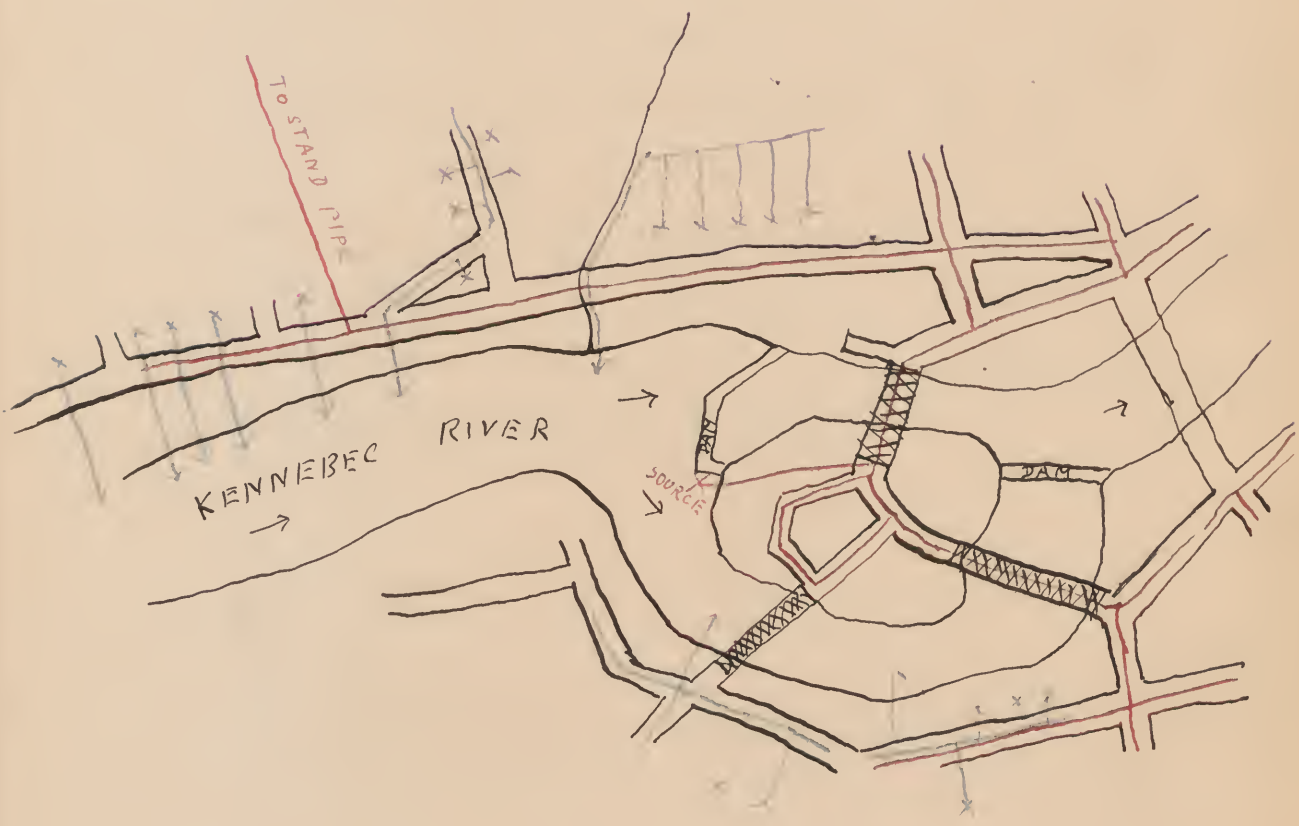
on the town sewerage department with the same and have all water respecting the same." This was a decided advance and was due to more or less agitation concerning the pollution of certain public sources of drinking water.

As near as can be estimated the sewer system supplies about 80% of the inhabitants of the village. A considerable number of those remaining have their own private sewers which empty directly into the river. The remainder of necessity resort to earth closets, cess-pools, and not a few have pipes layed that dump into some brook. As the water flow is inadequate in these brooks to properly wash the sewage into the river stinking pools have been formed which have been a source of much complaint to the health officer.

This method of disposing of the sewage unsterilized into the river is a source of danger to this town, because of the situation of some of the sewer mouths above the point at which drinking water is drawn, and to all of the towns farther down the river.

Approximately one third of the sewage of the town is dumped into the river above the dam in positions which make the pollution of the drinking water certain. On the next page is a diagram showing the location of the sewer mouths above the dam, the point at which the city water is pumped, the bridges, dam, etc.

The red lines indicate city water-pipes, and the red cross indicating the point in the river from which the city water is pumped. The green lines show the position and direction of flow of the sewers in this part of the town.



To be sure the water from the river is chlorinated, but that does not atone for the gross disregard of sanitary precautions outlined above.

Two years ago the Central Maine Power Co. constructed a dam which raised the water level five or six feet above the previous level. This raising of the water level has caused the sewers along the north side of the river above the dam to back up, a condition which has greatly



to assess the efficiency of the sewers involved, and also
to find some current file references to the inhabitants in
the vicinity. This particularly occurs during the spring
floods when the river is swollen beyond its usual proportions.

It is obvious that many changes in the sewer system
should be inaugurated. The sewer system located above
the lot should be abolished. The system should be expanded
to take in all parts of the town, and all people not connected
with it should be compelled to do so in accordance with
Article 54 of the town charter for 1923. All the private
sewers emptying into brooks or into the river above the
lot should be discontinued. All the sewer mains where
they empty into the river should be submerged below the
lowest water level, and as soon as possible steps should
be taken to disinfect the sewage.

GARBAGE, REFUSE, AND ASHES.



Garbage, Refuse, and Ashes.

There is no provision, for the disposal of garbage, made by the town. Each individual housekeeper must solve the problem for herself. For the most part the garbage is burned in the homes. Some of it is collected by individuals who keep a few pigs. This only accounts for a small part of it, however, as there are no large piggeries in the town.

There is some provision made, however, for the collection of refuse and ashes. During the summer months a weekly collection of refuse and ashes is made by the town. The people put their refuse by the side of the road, and teams hired for the purpose haul it away to the town dump. The town dump is located near the northern border of the town only about two-hundred yards from the main street. It is situated in a small gully, which it is evidently designed to fill up. For the renting of the dumping ground the town pays \$150. a year, and the expense of hauling brings the expenditure up to \$379.24 for the year 1922. No perishable material is supposed to be dumped, but this mandate has not been rigidly obeyed. Because of this the health officer has posted the following sign for all to read:



In spite of this incessant looking administration, people have continued to dump garbage there, and on Sept. 15th when the dump was visited there was a very unpleasant odor drifting over the vicinity emanating from the putrifying bodies of some sort of fish which had been dumped there. As there are houses in the near vicinity this state of affairs comes under the definition of a public nuisance.



In criticising the handling of refuse garbage and wishes the following recommendations are made:

That the town establish suitable facilities for burning garbage at a sufficiently out of the way place to prevent it from becoming a nuisance in itself.

That the town establish a routine collection of garbage once a week throughout the year.

VITAL STATISTICS.

Vital Statistics.

Mortality (deaths per 1000 inhabitants).

	1922	1921	1920	1919	1918
All causes	18.17	19.52	19.55	17.14	23.76
Typhoid fever	0.67	---	0.17	0.17	0.50
Tuberculosis (pul.)	0.17	---	0.67	0.84	1.00
Measles	0.00	---	0.00	0.00	0.00
Scarlet fever	0.00	---	0.00	0.00	0.00
Infant mortality	(ratio of deaths to births)				
	0.070	0.160	0.117	----	----

Morbidity (cases per 1000 inhabitants).

	1922	1921	1920	1919	1918
Typhoid fever	1.68	0.67	1.00	0.00	0.00
Tuberculosis (pul.)	0.00	0.50	0.84	0.34	0.00
Measles	0.00	51.16	16.39	0.00	0.00
Scarlet fever	0.34	16.39	4.01	0.00	0.00

It is the duty of the town clerk to enter in his books all reports of births, deaths, and marriages. It is also his duty to make out reports of the same, and send them to the State Registrar of Vital Statistics. It was from the latter official that the above vital statistics were obtained, as no statistics are compiled locally by the town clerk, or by the health officer who reports the cases of infectious diseases.

23.

CERTIFICATE OF BIRTH

E

or imprisonment
person, who shall
e therein.

No.

1. Full
2. Plac
3. Age.
6. Birt
7. Nur
9. Fatl
10. Las
11. Col
13. Birt
14. Mo
15. Las
16. Col
18. Bir
19. Fu
20. Pla
21. Ag
24. Bir
25. Ni
27. Fa
28. Las
29. Col
31. Bir
32. Mc
33. Last
34. Color.
36. Birth

Child's Name Josephine
Date of Birth June 1, 1923
Place of Birth Skowhegan
Street 13 Kent St. No.
Sex* F Color W
Living or Stillborn living
No. of Child, 1st, 2nd, etc. 1st
Legitimate or Illegitimate legitimate
Father's Name Henry Black
" Birthplace Skowhegan Color W
" Residence Skowhegan
Street 13 Kent St. No.
Father's Occupation Blacksmith
Mother's Maiden Name Sarah Smith
" Color W
Mother's Birthplace Waterville Me.
Mother's Occupation Housewife
Peter Pan
Skowhegan Maine, June 1 1923 M. D.
se Index for Sam G.

*Use Initial for Sex, Color, etc.

See Sections 18, 19 and 26 of Chapter 64, R.S.

(Over)

Divorced

Town Clerk's Office, Town of _____ 19____

The Intentions of Marriage between the parties above named were duly entered in this office, on the.....day ofA. D. 19..... and by me recorded according to law.

Clerk of.

The parties above named were joined in marriage at _____
by me, this _____ day of _____ A. D. 19 _____

Clergyman or Justice of the Peace.

Date of my Commission

Residence

**If other than White, (A) African. (M) Mulatto. (I) Indian. If of other races specify what. (Be very particular to fill all blanks. See other side of this page.)*

STATE OF MAINE

CERTIFICATE OF BIRTH

Child's Name Josephine

Date of Birth June 1, 1923

Place of Birth Skowhegan

Street.. 13 Kent St .. No.

Sex* 1- Color W

Living or Stillborn *Living*

No. of Child, 1st, 2nd, etc. 1st

Legitimate or Illegitimate... Legitimate

Father's Name..... Henry Black

" Birthplace. *St. John, N. H.* Color *W*

Residence *Shomberg*

Street. 13 Kent St. No. 13

Father's Occupation *Blacksmith*

Mother's Maiden Name. Sarah Smith

Color. *W*

Mother's Birthplace. Waterville, Me.

Mother's Occupation Housewife

Peter Van M. D.

Skowhegan Maine, June 1 192

*Use Initial for Sex, Color, etc.

[illegible]

(Over)

Cause of Death *John pneumonia*

Duration *5 days*

Contributing Cause *Exposure*

Duration *1 week*

Where was disease contracted, if not at place of death?

If death was in a hospital, or other institution, give its name.

How long an inmate.

Where from.

MEDICAL CERTIFICATE OF CAUSE OF DEATH

I hereby certify this *2* day of *June* 19*23*, that the foregoing statement of the cause of death is correct to the best of my knowledge and belief.

Peter P. M.D.
(Signature of Physician)

Address *14 Spring St*

Place of Burial *North Hill cemetery*


Date *June 3* 19*23*

Name of Cemetery *Stromberg*

Joe Hunkle
(Signature of Undertaker)

Address *3 Mechanic St*

CERTIFICATE OF MARRIAGE

 The laws of Maine provide for a fine not exceeding one thousand dollars or imprisonment not exceeding five years to be the punishment of any clergyman or other person, who shall solemnize a marriage within this state unless authorized to solemnize marriage therein.

No.

1. Full name of Groom James Mitchell Dumas
2. Place of Residence 12 Ashmont Ave
3. Age 23 4. Color* W 5. Occupation Plumber
6. Birthplace Skowhegan
7. Number of Marriage 1st 8. Single, Widowed or Divorced single
9. Father's Name Peter Dumas
10. Last Residence 14 Lee St Skowhegan
11. Color W 12. Occupation Plumber
13. Birthplace Montreal Canada
14. Mother's Maiden Name Eva Plowale
15. Last Residence 14 Lee St Skowhegan
16. Color W 17. Occupation Housewife
18. Birthplace Montreal Canada
19. Full name of Bride
20. Place of Residence
21. Age 22. Color 23. Occupation
24. Birthplace
25. Number of Marriage 26. Single, Widowed or Divorced
27. Father's Name
28. Last Residence
29. Color 30. Occupation
31. Birthplace
32. Mother's Maiden Name
33. Last Residence
34. Color 35. Occupation
36. Birthplace

Town Clerk's Office, Town of 19

The Intentions of Marriage between the parties above named were duly entered in this office, on the day of A. D. 19
and by me recorded according to law.

..... Clerk of

The parties above named were joined in marriage at
by me, this day of A. D. 19

..... Clergyman or Justice of the Peace.

Date of my Commission

Residence

*If other than White, (A) African. (M) Mulatto. (I) Indian. If of other races specify what. (Be very particular to fill all blanks. See other side of this page.)

SPECIAL NOTICE

This Certificate of the Clerk must be presented to the person who is to solemnize the marriage, before the ceremony is performed.

Every person authorized to unite persons in marriage shall make a record of every marriage solemnized by him, in the manner prescribed by law, and within *six days* thereafter he shall deliver or forward to the Clerk of each town or city in which the marriage intention was recorded a copy of such record of marriage. A similar return must also be made to the Clerk of the town or city in which the marriage was solemnized.

A penalty of not more than *one hundred* dollars is incurred for violation of these provisions.

Chapter 64, Revised Statutes.

RECORD OF A BIRTH

Child's Name.....

Date of Birth.....

Place of Birth.....

Street.....No.....

Sex.....Color.....

Living or Stillborn.....

No. of Child, 1st, 2nd, etc.,.....

Legitimate or Illegitimate _____

Father's Name.....

“ Birthplace _____ Color _____

“ Residence

Street.....No.....

Father's Occupation.....

Mother's Maiden Name.....

Color _____

Mother's Birthplace

“ Occupation

Name and address of Physician (or other person)
reporting said birth.

Date when received by Town Clerk.....

State of Maine

I hereby certify that the above birth record is correct to the best of my knowledge and belief.

=====

Clerk of _____

RECORD OF A DEATH

Place of Death.....

StreetNo.....

Name.....

How long a resident.....

Previous residence.....

Sex..... Color..... Married, Single,
Widowed
or Divorced

Deceased was husband of.....

“ “ wife of

Date of Birth: Year,.....Month,.....Day.....

Age: Years,..... Months,.....Days,.....

Occupation

Place of Birth.....

Name of Father.....

Birthplace of Father.....

Occupation of Father.....

Maiden Name of Mother.....

Birthplace of Mother

Name of Informant.....

Date of Death: Year.....Month.....Day.....

Cause of Death.....

.....

.....

..... Duration

Contributing cause

..... Duration

Where was disease contracted, if not at place of death?

If death was in a hospital, or other institution, give its

name

Did an operation precede death?

Date of

Was there an autopsy?

Name of Physician (or other person) reporting said

death,

P. O. Address.

Place of Burial.

Date of Burial.

Name of Cemetery.

Undertaker

P. O. Address.

Date when received by Town Clerk.

State of Maine

I hereby certify that the above death record is correct to the best of my knowledge and belief.

Clerk of.

RECORD OF A MARRIAGE

Groom

Bride

Residence of Groom

“ Bride

Age of Groom

“ Bride

Color of Groom

“ Bride

Occupation of Groom

“ Bride

Birthplace of Groom

“ Bride

No. of Marriage of Groom

“ Bride

Groom Widowed or Divorced

Bride “ “ “

Intention Filed

By whom Married

Residence

Official Station*

Date of Marriage

Place

*Clergyman, Justice of the Peace, etc.

(Record continued over.)

GROOM'S FATHER AND MOTHER

Father's Name.....

Residence.....

Color.....

Occupation.....

Birthplace.....

Mother's Name.....

Residence.....

Color.....

Occupation.....

Birthplace.....

BRIDE'S FATHER AND MOTHER

Father's Name.....

Residence.....

Color.....

Occupation.....

Birthplace.....

Mother's Name.....

Residence.....

Color.....

Occupation.....

Birthplace.....

State of Maine

I hereby certify that the above marriage record is correct to the best of my knowledge and belief.

Clerk of.....

Below are the forms used in reporting cases
of infectious disease.

(Form 1-1923)

REPORT OF CASES OF INFECTIOUS DISEASES

In the City or Town of.....

Send or mail promptly to Local Health Officer

Maximum penalty for failure to report \$50.00

Name of Patients	Sex	Age	Street and Number	Disease
.....				
.....				
.....				
.....				

Name of householder where these persons are.....

.....
If at place where milk or any other dairy products are prepared or kept for sale, report plainly
names and places.....

.....

School attended by children from these houses.....

.....

Source of infection.....

.....

Name of person reporting.....

P. O. Address and date.....

(Over

Physicians and householders are required by law to report to the local health officer all cases of the following diseases, with the exception of those marked with a star:

Actinomycosis	Mumps
Anthrax	Paratyphoid Fever
*Chancroid	Plague
Chickenpox	Pellagra
Cholera, Asiatic	Pneumonia
Conjunctivitis, acute infectious, not due to the Gonococcus	Polio myelitis (acute infectious)
Dengue	Rabies
Diphtheria (membranous croup)	Rocky Mt. Spotted Fever
Dysentery	(tick fever)
(a) amebic	Scarlet Fever
(b) bacillary	Septic Sore Throat, epidemic sore throat
Encephalitis, epidemic	Smallpox
Favus	*Syphilis
German Measles	Tetanus
Glanders	Trachoma
*Gonococcus Infection	Trichinosis
Including Ophthalmia	Tuberculosis, all forms
Neonatorum	Typhoid Fever
Hookworm Disease	Typhus Fever
Influenza (Grippe)	Vincent's Angina
Leprosy	Whooping Cough
Malaria	Yellow Fever
Measles	
Meningitis	
(a) cerebrospinal	
(b) tuberculous	

Industrial Diseases and those marked with a star in the above list, must be reported direct to the State Department of Health, using the special report blanks which are supplied by the department for that purpose. **Tuberculosis must be reported on Form 202.**

Weekly Report of Local Health Officer

To the State Department of Health, Augusta, Maine:

The following is a report of all known cases of the infectious or notifiable diseases in the town of _____ State of Maine, during and at the close of the week ending Saturday, _____ 19_____.

*Names of Diseases	Number Sick at last report	During the week, number			Number sick at close of week	Number of cases this outbreak
		Taken sick	Recovered	Died		
Anthrax						
Chickenpox						
Diphtheria						
Dysentery.....						
Encephalitis, epidemic						
German Measles.....						
Glanders						
Influenza						
Measles.....						
Meningitis, cerebrospinal.....						
Mumps.....						
Paratyphoid Fever						
Pellagra						
Pneumonia						
Poliomyelitis						
Rabies.....						
Searlet Fever.....						
Septic Sore Throat.....						
Smallpox						
Tetanus						
Tuberculosis.....						
Typhoid Fever						
Vincent's Angina.....						
Whooping Cough						
.....						
.....						
.....						

*Other notifiable diseases on back of this blank.

Local Health Officer.

Post Office Address

Date

The notifiable diseases not included on the front of this blank are: Actinomycosis; Asiatic cholera; chan-croid* conjunctivitis, acute infectious, not due to the gonococcus; dengue; favus; gonococcus infection*, including ophthalmia neonatorum; hookworm disease; leprosy; malaria; plague; Rocky Mt. spotted fever; syphilis*; trachoma; trichinosis; typhus fever; yellow fever.

The industrial diseases and the three marked with a star in the preceding paragraph must be reported direct to the State Department of Health, using the special report blanks which are supplied by the department for that purpose.

Tuberculosis should be reported by the physician on Form 202.

The local health Officer or the secretary of each local board of health in Maine is requested to forward a report to the State Department of Health, Augusta, Maine, promptly on the occurrence of an outbreak of any of the notifiable diseases and thereafter at the close of each week during any portion of which a case of any of these diseases has been present within his jurisdiction.

In filling in the columns under "During the Week, Number," remember dates are not wanted, but merely the figures indicating the number taken sick, recovered or who have died within the week.

If you need any of the blanks, circulars or other printed matter issued by the State Department of Health, please fill in on the blank lines the form-number and the number of each you want.

Copies of Form

The reporting of births deaths and marriages is for the most part satisfactory. However I think that the town clerk should analyse his reports so that some orderly information could be obtained without applying to Augusta for it.

The reporting of mortality, and morbidity, however, is not so satisfactory. It will be seen that the mortality rate in certain cases exceeds the morbidity rate for the same disease and for the same year.

By looking over the statistics it will be seen that they are obviously inaccurate. The cause for this inaccuracy is the negligence of the attending physicians. They appreciate the importance of reporting births and deaths, but do not feel so much the importance of reporting cases of infectious disease.

A full time, wide awake health officer could remedy this defect by exerting a little pressure and authority upon the above named negligents.

MILK SUPPLY.

Milk

The milk supply of Snowhogan comes from the farms in the country near by. There are about two different dairies which supply the major portion of the milk to the towns people. Each has his own milk route, the exact limitations of which were not determined. Many of the people own cows of their own, with which they supply themselves and some of their neighbors. These small producers are not inspected and are not licensed.

The milk farm which we chose to inspect, a fair sample of them all it is judged, is about four miles from the central part of the village. It consists of about 200 acres of land, divided up into wood lot, pasturage, tillage, and building space. About twenty acres of the land are planted with hay, grain, and corn for the silo.

A portion of the ell is finished off for use as a dairy. The milk room is large, airy, and clean. It has one door, and one window, both well screened. The walls and ceiling are of close, unpainted, smoothly planed boards which match well, thus allowing no dirt to filter in. The room contains a cream separator, and a refrigerator. The refrigerator is a water tight box lined with zinc. The box is kept full of ice water beneath which the cream, and milk are submerged in metal containers.

The cans, strainers, and other utensils which are used in handling the milk are washed in the kitchen, sterilized by boiling water, and stored in the milk room until used. The water used in the house comes from a spring about 1/3 mile from the house to which it is pumped by an electric pump.

The barn is about 75 feet from the house and dairy. The whole length of one side of the barn is given over for a tie-up for the horses and cattle. There is a partition shutting off the cattle from the horses. The tie-up has been recently white washed, and looks very neat and clean. It is well lighted by large pivotted windows along the whole length of the structure. There are no screens on the windows however. The manure is thrown out of these windows into the barn yard from which it is carted two or three times a year into the fields.

The herd consists of nine animals, part Jerseys and part Guernseys. They are tuberculin tested once a year, and one of the herd which gave a positive test on the last trial has been disposed of. The owner of the sacrificed cow is reimbursed for his loss by a state fund. The herd seemed to be most well kept.

No suits are used by the milkers when performing their duty, except the ordinary overalls. The galls used for milking are not covered. The cattle are washed off well before milking.

Dairy Inspection of Boston's Milk Supply.

Name Maurice G. Malbon
 Town of Skowhegan State of Maine Dairy No. 5
 Milk being delivered by S. S. S. S.
 to Cutworms in Skowhegan for shipment to Boston, Mass.
 Date of inspection Sept. 12, 1923 time 1:30 P. M.
 Was milking or handling milk being carried on at time of inspection no
 Delivered at station no R.R. no time no A. P. M.
 What milk is shipped { Night of day of shipment
 Morning of day of shipment } Do you receive other milk at any time, if so from
weeds { Night of day before shipment } whom. no
 Morning of day before shipment }
 No. of cows 9 No. milking 9 Amount produced 50-60 lbs a trip
 Are udders free from disease yes
 Does stable need whitewashing no Is ventilation effective no
 Are pigs kept in stable no or a source of offence yes Is ice supply adequate yes
 Is milk room satisfactorily located yes Method of cooling milk in tanks
 Danger of contamination no
 Source of water supply Spring
 Is it likely to be contaminated, and how no
 Are privy vaults protected against flies yes Are they so located as not to be a source of danger yes
 Are there infectious diseases among milk handlers or their families no
 Date and nature of last case Partition boxes from cows
 Remarks Remove manure 50 feet from stalls
Remove Pigs 50 feet from stable

SCORE CARD—APPROVED BY U. S. BUREAU OF ANIMAL INDUSTRY.

EQUIPMENT	SCORE		METHODS	SCORE	
	Perfect	Allowed		Perfect	Allowed
COWS.					
Health.....	6	5	Clean.....	8	7
Apparently in good health... 1			(Free from visible dirt, 6.)		
If tested with tuberculin within a year and no tuberculosis is found, or if tested within six months and all reacting animals removed... 5	5		STABLES.		
(If tested within a year and reacting animals are found and removed, 3.)			Cleanliness of stables.....	2	6
Food (clean and wholesome).....	1	1	Floor.....	1	1
Water (clean and fresh).....	1	1	Walls.....	1	5
			Ceiling and ledges.....	1	5
			Mangers and partitions.....	1	5
			Windows.....	1	2
			Stable air at milking time.....	3	5
			Freedom from dust.....	3	1.5
			Freedom from odors.....	2	
			Cleanliness of bedding.....	1	1
			Barnyard.....	2	5
			Clean.....	1	
			Well drained.....	1	
			Removal of manure daily to 50 feet from stable or properly stored..	2	0
STABLES.			MILK ROOM OR MILK HOUSE.		
Location of stable.....	2	8	Cleanliness of milk room.....	3	3
Well drained.....	1	5	UTENSILS AND MILKING.		
Free from contaminating surroundings.....	1	3	Care and cleanliness of utensils.....	8	6
Construction of stable.....	4	2, 2	Thoroughly washed.....	2	2
Tight, sound floor and proper gutter.....	2	1	Sterilized in steam for 15 minutes.....	3	2
Smooth, tight walls and ceiling.....	1	6	(Placed over steam jet, or scalded with boiling water, 2.)		
Proper stall, tie, and manger..	1	6	Protected from contamination.....	3	2
Provision for light: Four sq. ft. of glass per cow.....	4	4	Cleanliness of milking.....	1.5	9
(Three sq. ft., 3; 2 sq. ft., 2; 1 sq. ft., 1. Deduct for uneven distribution.)			Clean, dry hands.....	3	5
Bedding.....	1	5	Udders washed and wiped....	6	1
Ventilation.....	7	5	(Udders cleaned with moist cloth, 4; cleaned with dry cloth or brush at least 15 minutes before milking, 1.)		
Provision for fresh air, controllable flue system.....	3	1	HANDLING THE MILK.		
(Windows hinged at bottom, 1.5; sliding windows, 1; other openings, 0.5.)			Cleanliness of attendants in milk room.....	2	1
Cubic feet of space per cow, 500 ft.....	3	3	Milk removed immediately from stable without pouring from pail.	2	1
(Less than 500 ft., 2; less than 400 ft., 1; less than 300 ft., 0.)			Cooled immediately after milking each cow.....	2	5
Provision for controlling temperature.....	1	0	Cooled below 50° F.....	5	5
UTENSILS.			(51° to 55°, 4; 56° to 60°, 2.)		
Construction and condition of utensils.....	1	8	Stored below 50° F.....	3	3
Water for cleaning.....	1	5	(51° to 55°, 2; 56° to 60°, 1.)		
(Clean, convenient, and abundant.)			Transportation below 50° F.....	2	2
Small-top milking pail.....	5	0	(51° to 55°, 1.5; 56° to 60°, 1.)		
Milk cooler.....	1	5	(If delivered twice a day, allow perfect score for storage and transportation.)		
Clean milking suits.....	1	0			
MILK ROOM OR MILK HOUSE.					
Location: Free from contaminating surroundings.....	1	1	Read your score card carefully and improve where points are low.		
Construction of milk room.....	2	2			
Floor, walls, and ceiling.....	1				
Light, ventilation, screens.....	1				
Separate rooms for washing utensils and handling milk.....	1	2			
Facilities for steam.....	1	5			
(Hot water, 0.5.)					
Total.....	40	25.9	Total.....	60	37.5

Equipment 25.3 + Methods 37.5 = 62.8 Final Score.

NOTE 1.—If any exceptionally filthy condition is found, particularly dirty utensils, the total score may be further limited.

NOTE 2.—If the water is exposed to dangerous contamination, or there is evidence of the presence of a dangerous disease in animals or attendants, the score shall be 0.

Inspection made in my presence—date Sept. 12, 1923 Hour 2:30 PMMaurice G. Malbon Producer.Maurice S. Philbrick Inspector.

HEALTH DEPARTMENT, BOSTON, MASS.

Dairy Inspection of Boston's Milk Supply.

Name Maurice A. Malbon
 Town of S. Cowhegan State of Maine Dairy No.
 Milk being delivered by Same
 to S. Cowhegan Jersey Creamery for shipment to Boston, Mass.
 Date of inspection 9-5-22 time 9:50 A. M.
 Was milking or handling milk being carried on at time of inspection no
 Delivered at station S. Cowhegan R.R. the Cent time A. P. M.
 What milk is shipped { Night of day of shipment } Do you receive other milk at any time, if so from
 { Morning of day of shipment } whom no
 { Night of day before shipment }
 { Morning of day before shipment }
 No. of cows 7 No. milking 7 Amount produced 40 lbs a trip
 Are udders free from disease yes
 Does stable need whitewashing yes Is ventilation effective no
 Are pigs kept in stable no or a source of offence yes Is ice supply adequate yes
 Is milk room satisfactorily located none Method of cooling milk in tanks
 Danger of contamination no
 Source of water supply spring
 Is it likely to be contaminated, and how no
 Are privy vaults protected against flies yes Are they so located as not to be a source of danger yes
 Are there infectious diseases among milk handlers or their families no
 Date and nature of last case
 Remarks white wash partition boxes from cows.
Remove manure 50 ft from stable. Stop using
horse manure in gutter. Remove pig 50 ft from stable.
Provide a sanitary milk room.
 SCORE CARD—APPROVED BY U. S. BUREAU OF ANIMAL INDUSTRY.

EQUIPMENT	SCORE		METHODS	SCORE	
	Perfect	Allowed		Perfect	Allowed
COWS.					
Health.....	6	Clean.....	8	6
Apparently in good health... 1			(Free from visible dirt, 6.)		
If tested with tuberculin within a year and no tuberculosis is found, or if tested within six months and all reacting animals removed... 5			STABLES.		
(If tested within a year and reacting animals are found and removed, 3.)			Cleanliness of stables.....	6	2.5
Food (clean and wholesome)..... 1	1	1	Floor.....	2	1.4
Water (clean and fresh)..... 1	1	1	Walls.....	1	1.4
STABLES.			Ceiling and ledges.....	1	1.4
Location of stable.....	2	8	Mangers and partitions.....	1	1.4
Well drained..... 1	1	1	Windows.....	1	1.2
Free from contaminating surroundings..... 1	1	1	Stable air at milking time.....	5	2.2
Construction of stable.....	4	2.2	Freedom from dust.....	3	
Tight, sound floor and proper gutter..... 2	1		Freedom from odors.....	2	
Smooth, tight walls and ceiling..... 1	1		Cleanliness of bedding.....	1	1.4
Proper stall, tie, and manger... 1	1		Barnyard.....	2	1.2
Provision for light: Four sq. ft. of glass per cow..... 4	4	4	Clean.....	1	
(Three sq. ft., 3; 2 sq. ft., 2; 1 sq. ft., 1. Deduct for uneven distribution.)			Well drained.....	1	
Bedding..... 1	1	1	Removal of manure daily to 50 feet from stable or properly stored..	2	0
Ventilation..... 7	7	2	MILK ROOM OR MILK HOUSE.		
Provision for fresh air, controllable flue system..... 3	1		Cleanliness of milk room.....	3	0
(Windows hinged at bottom, 1.5; sliding windows, 1; other openings, 0.5.)			UTENSILS AND MILKING.		
Cubic feet of space per cow, 500 ft., 3; less than 500 ft., 2; less than 400 ft., 1; less than 300 ft., 0.)			Care and cleanliness of utensils..	8	6
Provision for controlling temperature..... 1	0		Thoroughly washed.....	2	
UTENSILS.			Sterilized in steam for 15 minutes.....	3	
Construction and condition of utensils.....	1	1	(Placed over steam jet, or scalded with boiling water, 2.)		
Water for cleaning.....	1	1	Protected from contamination	3	
(Clean, convenient, and abundant.)			Cleanliness of milking.....	1.5	2.5
Small-top milking pail.....	5	0	Clean, dry hands.....	3	
Milk cooler.....	1	0	Udders washed and wiped....	6	
Clean milking suits.....	1	0	(Udders cleaned with moist cloth, 4; cleaned with dry cloth or brush at least 15 minutes before milking, 1.)		
MILK ROOM OR MILK HOUSE.			HANDLING THE MILK.		
Location: Free from contaminating surroundings.....	1	0	Cleanliness of attendants in milk room.....	2	0
Construction of milk room.....	2	0	Milk removed immediately from stable without pouring from pail.	2	1
Floor, walls, and ceiling.....	1		Cooled immediately after milking each cow.....	2	0
Light, ventilation, screens... 1			Cooled below 50° F.....	5	5
Separate rooms for washing utensils and handling milk.....	1		(51° to 55°, 4; 56° to 60°, 2.)		
Facilities for steam.....	1	0	Stored below 50° F.....	3	3
(Hot water, 0.5.)			(51° to 55°, 2; 56° to 60°, 1.)		
Total <u>16.4</u>	40	16.4	Transportation below 50° F.....	2	1
			(51° to 55°, 1.5; 56° to 60°, 1.)		
			(If delivered twice a day, allow perfect score for storage and transportation.)		
MILK ROOM OR MILK HOUSE.			Read your score card carefully and improve where points are low.		
Location: Free from contaminating surroundings.....	1	0	Total <u>30.8</u>		
Construction of milk room.....	2	0	60 <u>30.8</u>		
Floor, walls, and ceiling.....	1				
Light, ventilation, screens... 1					
Separate rooms for washing utensils and handling milk.....	1				
Facilities for steam.....	1	0			
(Hot water, 0.5.)					
Total <u>16.4</u>	40	16.4			

Read your score card carefully and improve where points are low.

Total 30.8 Total 60 30.8

Equipment 16.4 + Methods 30.8 = 47.2 Final Score.

NOTE 1.—If any exceptionally filthy condition is found, particularly dirty utensils, the total score may be further limited.

NOTE 2.—If the water is exposed to dangerous contamination, or there is evidence of the presence of a dangerous disease in animals or attendants, the score shall be 0.

Inspection made in my presence—date 9-5-22 Hour 10:15

Maurice A. Malbon Producer.

H. S. Robinson Inspector.

The City of Chicago Department of Health
 Jersey Creamery - vicinity of 11th Avenue, Chicago



The Jersey Creamery is located near the southern edge of the town, in a small valley by the side of a small brook. Unfortunately this brook is the one into which some of the private sewers drain. Occasionally there is some bad odor in the vicinity.

The water supply of the dairy comes from an artesian well immediately under the structure.

The dairy is provided with an ammonia cold storage plant which maintains at all times a desirable temperature.

No special uniforms are worn by the operators, and there is no medical inspection of these operators. When they are sick they are discharged from duty until they are well again.

Nothing but cream is purchased by this Dairy. From the cream they make butter and ice cream. As by-products they sell buttermilk, and skim milk.

The batch method of pasteurization is used. The cream is not pasteurized in bottles. As soon as a can of cream arrives it is poured in with other cream to be pasteurized in bulk. The cream is stored in vats after pasteurization, 150° F. for 50 min.

The cream coming in is tested for acid. All the cream positive for acid is used for butter. The cream is then tested for butter fat content.

Only about 3% of the products of the Dairy are sold locally. The rest is sold in Boston.

The Creamery is the only source of pasteurized milk in the town. There is no certified milk in the town.

The following table will give an idea of the amount of cream handled:-

Jan. 1924

Total lbs Cream purchased 27,559.4

Total Lbs Butter Fat Purchased 18,008.9

The Stockholm Jersey Creamery was visited and scored by W. C. Robinson of the Boston Health Department, on August 2, 1922. His report on the milk analysis at that time is as follows:-

Dairy OK. Jer. Creamery
The Town of Stockholm, Maine.

BOSTON HEALTH DEPARTMENT—DAIRY DIVISION
INSPECTION OF MILK DEPOTS

EQUIPMENT	SCORE		METHODS	SCORE	
	Perfect	Allowed		Perfect	Allowed
LOCATION	5	5	MILK AND WASHROOM		
Deduct if opening into—			Cleanliness:	20	19.5
Store.....	1		Surroundings clean.....	1	8
Living rooms.....	2		Floors, including corners.....	2	1.7
Kitchen.....	2		Walls: Clean.....	1	1.
Laundry.....	3		Ceiling.....	2	2.
Located in basement.....	3		Windows and ledges.....	1	1.
Cellar.....	5		Refrigerator and storage vats.....	5	5.
Toilet opening into depot.....	5		Depot free from flies.....	5	5.
Toilet into barn.....	5		Depot free from odor.....	3	3.
CONSTRUCTION	20	18	UTENSILS AND APPARATUS		29
Floor:			Cleanliness:	55	
Cement.....	5	5	Pasteurizer and Cooler:		
Wood.....	3		Clean.....	2	2
Tile.....	2		Sterilized.....	3	2
Brick.....	2		Separator and Clarifier:		
Smooth and free from defects.....	5	4	Clean.....	2	2
Walls and Ceiling:			Sterilized.....	3	2
Enameled metal, wood or tile....	7	7	Bottle Filler:		
Cement.....	6		Clean.....	2	0
Plaster.....	3		Sterilized.....	3	0
Brick.....	2	2	Pumps and Pipes:		
Smooth and free from defects....	3		Clean.....	2	2
Washroom:	15	15	Sterilized.....	3	2
Situated so that dirty utensils do			Receiving vats:		
not pass through milk room....	3		Clean.....	2	2
Smooth tubs.....	3		Sterilized.....	3	2
revolving brushes.....	5		Farmer's Cans:		
Rinsing and draining facilities....	4		Clean.....	2	2
SCREENS IN FLY SEASON	5	2.5	Sterilized.....	3	2
SANITATION			Bottles:		
ght: Window area equal to 15%	8	8	Well soaked, washed, rinsed in		
of floor area.....			running water and drained....	5	0
Deduct 1 for every 2% less.	5	3	Sterilized.....	5	0
Ventilation:			Cans for Storing:		
Free from odors.....	5		Clean.....	5	5
Odors in depot.....	0		Sterilized.....	5	4
Drainage:			Shipping Crates:		
Ample.....	5	10	Washed and rinsed.....	2	0
Trapped to sewer by deep seal trap,	5		Bottle Caps properly stored....	3	
Vats and Refrigerators:	5	5	HANDLING OF MILK		
Impervious construction and well			Protection from Dust and Flies:		
covered.....	4		Windows and doors screened....	5	15
Indirectly trapped to sewer.....	3		Covered vats.....	2	3
Apparatus:			Clean hands.....	3	3
Bottle Filler:	20	13	Clean suits.....	2	2
Machine.....	3		No expectorating in depot.....	2	0
Hand.....	2		Bottling machine kept covered... 1		
Bottle Capper:			Storage:		
Machine.....	3		Below 50° F.....	10	10
Hand.....	0		Above 50° F.....	0	
Milk Pumps and Pipes:					
Readily taken apart and cleaned,	3				
Pipe Connections:					
All crosses or tees.....	3				
Pasteurizer:					
Easily cleaned.....	3				
Depot equipped with sterilizing					
apparatus.....	4				
Bottle caps in clean covered re-					
ceptacle.....	1				
Dressing Room:					
Hot water, soap and towels.....	2				
Sanitary lavatory.....	2				
Uniform working suits.....	1				
TOTAL.....	84.5	64.5	TOTAL.....	69.5	69.5

Score of Equipment.....84.5.....Multiplied by 1=.....84.5.....
Score of Methods.....69.5.....Multiplied by 2=.....139.0.....
Total.....223.5.....÷ 3=.....74.5.....Final Score
Inspector.....H. S. Robinson.....m.s.f.

MILK DEPOT. Dealer

At *Shenbogan* *Maine* *Joany* *Cummary*

Date *July 10, 1922*

Inspector *H. S. Richmond*

Building *Frame* *Brick* *2* *1st*

No.

Occupied

Entire

Part

Cans Cream sold

Time *3:45 PM* *4:45 PM*

Cans Milk sold

Bulk *Ref* *Bottled*

Bulk

Bottled

Bulk

Bottled

Of inspection Began

Ended

What make

Temperature

180° F

Holder or retailer

30 min

How long held

How long to Cool after holding

Cooled to

46° C

Capacity *6000 lbs*

Wagons

No.

Retail

Wholesale

Nos. licenses

Plates on

Address on

Covered

Separate storage comp.

Cleanliness

Odor

Notice

To owner

Agent

Milk dealer

No. Days limit

Issued

Milk From — Name and Address

Railroad

Arrives at

Time

total production about 312

about 24 mps of cream sent to Boston daily

100 lbs. of milk made daily + considerable

ice cream

REMARKS

Provide cover for vats in pasteurization room.
Seam window & better ventilation must be provided.
Dub pan under shaft in separator.

The Chowhogan Jersey Creamery was visited and
 covered by W. C. Robinson of the Boston Health Department,
 August 2, 1922. His report on the milk analysis
 at that time is as follows:-

Dairy Wk. Jer. Creamery

The Town of Chowhogan, Maine.

Date. Aug. 2, 1922

Sample No	Temp.	Acid. per C.C.
1	48F	1 %

A report of his visit to the creamery is given below:-

SANITARY NUISANCES.

Sanitary Nuisances.

(a) Sources of odors.

Skowhegan is very free from unpleasant odors. There is no manufacturing industry there which is productive of odors such as are so deplorable in the vicinity of glue factories and other industrial units which deal with animal residues. The only source of odors are from earth closets, the town dump, slaughter houses, and leaky sink drains and sewers.

The health officer has posted a sign at the entrance to the town dump, prohibiting the dumping of decomposable matter, but this mandate is not always obeyed. Consequently there is at times a slight disagreeable odor floating over that part of the town.

He likewise investigates all earth closets and drains complained of, and causes them to be remedied. In the case of earth closets, the contents are hauled away and dumped into the river below the town. The owners are then instructed to use sand and chloride of lime in their closets to prevent the production of offensive odors.

On the south side of the river there is a small brook which empties into the river. Into this brook several private sewers empty. As the flow of water is insufficient to properly wash along the sewage, there is formed a foul stagnating pool

from which at times the odor is very disgusting.

This condition has been complained of several times but so far there has been no improvement.

Two of the slaughter houses are well beyond the village limits, but the third and most used one is in the village not over two hundred yards from one of the main streets. Occasionally odors from this establishment are troublesome as the entrails are thrown out upon the ground and allowed to rot. This condition has been complained of but nothing effective has been done about it.

(b) Dust.

The only source of dust is the street and with the present amount of automobile traffic that is a serious problem. This condition has been handled in three ways (1) Sprinkling. The town has two horse hauled sprinklers which are constantly on the street in dry weather. The cost of maintenance is borne by the residents along the street sprinkled. This tax is compulsory and not optional so that the method is quite efficient. (2) Oiling. Several of the main streets are constructed of "Tarvia" and these streets are oiled. This method is very satisfactory, and practically eliminates dust. (3) Calcium Chloride. Recently calcium chloride has been sprinkled on the street in crystalline form. By reason of the deliquescent properties of this salt it was expected that the streets would be kept moist. This method was only partially successful as the rains soon washed most of it away.

(c) Rubbish and General Cleanliness, Empty Lots, Dumps.

As a whole the town is in very good condition as regards general cleanliness. A man is hired by the town to keep the streets in the business portion clean. The road commissioner has men repairing the streets, and it is a part of their duty to see that the streets in the rest of the town are kept clean. All empty lots have been pretty well cleaned up, and the rubbish hauled to the town dump, which has been described earlier in this report.

(d) Flies and Mosquitoes.

There are no general measures taken by the health department to exterminate flies or mosquitoes. Merchants who display food stuffs out of doors are required to keep them under cover, screens or glass, to prevent their contamination by flies.

(e) Rats and Verrin.

Rats and verrin are in no way a public scourge in this community. Individuals who are bothered by them settle their own troubles in their own way. Some use traps, others use poison, and others use the family cat.

(f) Stables and Manure.

There is only one public stable in the town. The manure is thrown into the basement beneath the stable under cover and protected from free access to flies. Every two weeks the manure is hauled away by farmers who wish to use it on their land.

The manure in private stables is either used by the owners on their own gardens or disposed of in the way described above.

(g) Breeding Places of Flies and Mosquitoes.

There are plenty of wet boggy places about Skowhegan for the breeding places of flies and mosquitoes. However most of these places are at sufficient distance from the more thickly populated portion of the village so that they are not very troublesome. No steps have been taken to abolish such places. Skowhegan is too far north to be menaced by malaria or yellow fever, so these places are much less to be feared than in many other localities. With the present system of public health protection a rigid campaign against mosquitoes can not be expected, nor, considering the many other more important fields for endeavor, do I consider it justified.

(h) Unnecessary Noises.

Noises are of no importance as a factor in this report. The town is very quiet and peaceful.

(i) Sources of Smoke.

There are no sources of smoke in the town of sufficient magnitude to be a public health problem.

(j) Piggeries.

There are no piggeries in the town.

(k) Legal Definition of "Nuisance" - Method
of Abatement.

A public or common nuisance is such an inconvenience, or troublesome offence as annoys the whole community in general, and not merely some particular person. It produces no special injury to one more than to another of the people.

Upon complaint to the Health Officer, three notifications are sent to the accused person, defining the nuisance, and ordering him to rectify the condition. If he does not do so, the health officer goes before the grand jury, tells his story, is questioned by the district attorney. If it is decided that a nuisance has been committed, they return an indictment, and the man goes on trial before the traverse jury. If found guilty the judge imposes sentence according to law.

INDUSTRIAL HYGIENE.

Wine Spinning Factory.

In 1921 a new factory building was erected for the use of the Wine Spinning Company. It is a brick and cement building four stories high, located on the island.

The employees work nine hours a day for five days and three hours on Saturday. The hours are from seven to twelve A.M. and from one to five P.M. Approximately 80% of the 100 employees are less than 15 years of age. None are below 12, and none are more than 15 years old. 70% are females and 30% are males.

There are four floors on which work is done, each of which forms one large room, with ample working space. The rooms are 15 feet high and each contain 4,400 cu. ft. of air space. The ventilation is by means of traps in the windows, which supply plenty of fresh air at all times. There is a very little dust in the mill, that which is present being wool fibres from the spindles. The only odor is that of wool. The rooms are provided with large double glazed windows, which provide almost all light in the day time. At night illumination is provided by 100 75watt lights, 50 on each floor.

The drinking water is supplied from Russell's Spring. Each worker brings his own cup.

There are two toilets and two wash rooms on each floor, one for males and one for females.

Each floor is provided with locker rooms for the employees, and they change their clothing to suit their individual tastes.

In the past eight years in this and in the old mill there have been but two accidents. Two women lost fingers, one a traumatic amputation, and the other an amputation following infection due to a slight laceration received in the mill.

As is required by law in this state the workers are protected by the Workmen's Insurance. No other protection is carried.

The plant is heated by steam with automatic regulation. The humidity is maintained constant by specially designed centrifugals. On the day of our inspection the temperature was 75 degrees F. and the humidity was 65%.

Each floor is protected by Grinnell Fire Extinguishers.

No receptacles for spit are provided.

No Medical examinations are required before employment or after.

No chemicals are used in the mill so there is no danger of industrial poisoning.

The only hazards are from machinery and from electricity, and all possible precautions are taken.

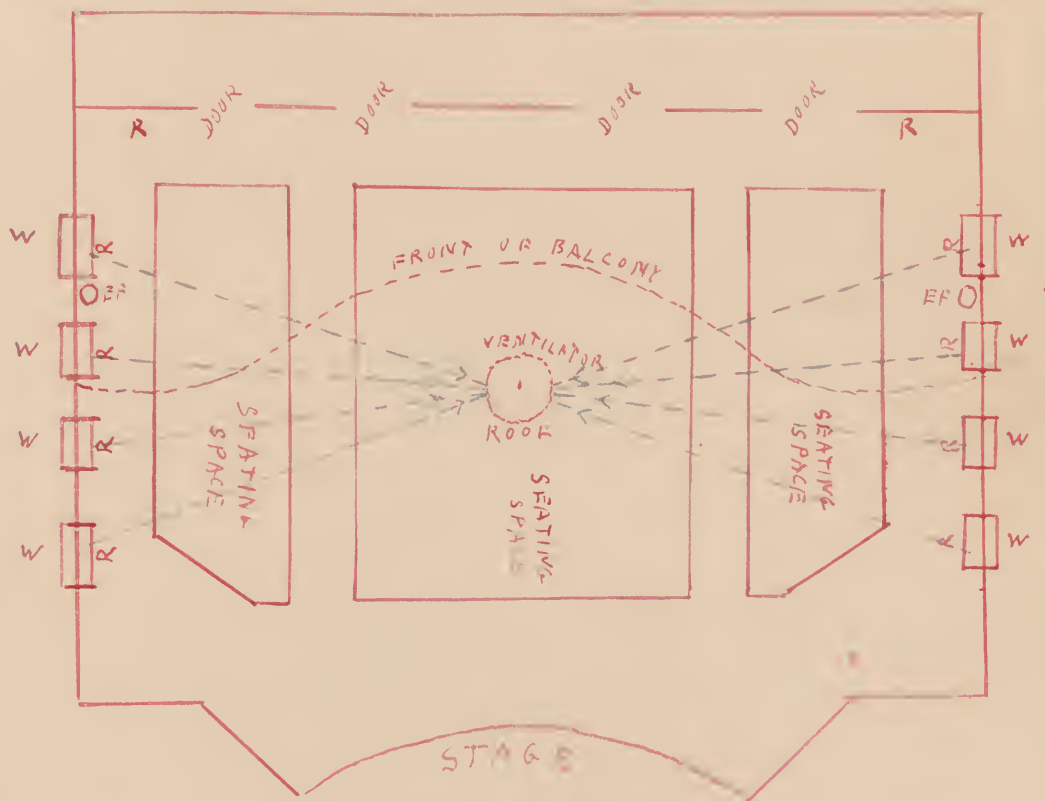
VENTILATION.



Ventilation of the City Opera House.

The opera house is the largest building in the town. In the basement is located the town lock-up. On the first floor are the offices of the town officials, including the Supt. of Schools, the Select Men, the Town Clerk, the School Nurse, the Road Commissioner, and the County Farm Agency. There is no system of ventilation for these offices except by means of the windows.

The remainder of the building up stairs is occupied by the auditorium, which is rented to a local moving picture display, and seats approximately one thousand people. A diagram of the auditorium is shown below:-



W = WINDOW
EFO = ELECTRIC FAN
R = RADIATORS

THE HISTORY OF THE

REIGN OF KING CHARLES THE FIRST

BY SAMUEL JOHNSON

IN TEN VOLUMES

LONDON: Printed by A. MILLAR, in Strand, 1742.

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A steam radiator is situated beneath each window, and the heated air enters through small apertures beneath. These apertures may be opened or closed by means of levers conveniently placed. The vitiated air escapes through a ventilator in the middle of the vaulted roof overhead.

In the summer the air is kept constantly circulating through the opened windows by means of two electric fans.

INFECTIOUS DISEASE.

INFECTIOUS DISEASE.

(a) List of Diseases which are Required to be Reported
by the Health Department.

Anthrax	Menigitis	Septic sore throat
Chicken Pox	cerebrospinal tuberculous	Small pox
Diphtheria	Mumps	Tetanus
Dysentery amoebic bacillary	Paratyphoid fever pneumonia	Tuberculosis all forms
Erys	Polymyelitis	Typhoid Fever
German Measles	Rabies	Whooping cough
Glanders	Scarlet Fever	
Influenza (Grippe)		

(b) Quarantine Regulations.

Diseases Quarantined.	Period of quarantine
Scarlet fever	30 days
Small Pox	" "
Diphtheria	" "
Measles	14 "

Cases of the above diseases are released from quarantine when they are declared recovered from the disease provided it is not before the time minimum specified above. In the case of diphtheria negative throat cultures are required in addition.

The Work of Disinfection.

STATE DEPARTMENT OF HEALTH OF MAINE.

There has, in the last few years, been a marked change in the practice of the leading and the most efficient health officers in their work of disinfection. It has been in the direction of banishing formaldehyde fumigation and all other sorts of fumigation in room disinfection and the substitution of soap and water applied with the scrubbing brush; boiling things that can be boiled; the use of disinfecting solutions as required, and exposure to air and sunshine.

There are two distinct lines of work in the disinfection of the person who has or has had an infectious disease and the disinfection of his surroundings.

(1) During the course of the illness efficient measures should continually be observed to guard against the carrying of infection from the sick or infectious person and for the prompt destruction of all excretions or other infectious matter so it may not soil or render infectious the things, rooms, or furnishings used or occupied by the patient.

(2) The final disinfection at the termination of the period of illness and convalescence. The more faithfully the first line of work is done, the less the need of the terminal disinfection.

The following are brief directions for carrying out the most important pieces of work when there is need of disinfection. (See "Disinfecting Solutions.")

Discharges from the Nose and Throat.

In a long list of our common infectious diseases—diphtheria, scarlet fever, measles, German measles, whooping cough and others—a precautionary measure of prime importance is to catch and destroy the discharges from the mouth and throat and nose, and thus guard against the smearing of the clothing, the bedding, or anything else with this infectious matter.

The surest way of destroying infection in these discharges is to receive them in burnable spit-cups or on pieces of cloth or paper and burn them. Handkerchiefs or other cloths or clothing which have been soiled with these discharges may be freed from infection by immersion in water or soap and water and boiling for at least 10 minutes. Or,

they may be disinfected by soaking them several hours in the weak formaldehyde solution or the solution of Kreso or Coro-Noleum (Solution 7 or 8).

Discharges from the Bowels.

In another class of diseases—typhoid fever, para-typhoid fever, dysentery, Asiatic cholera—the chief source of infection is in the discharges from the bowels and sometimes in the urine.

These are disinfected with the greatest degree of certainty by means of heat. Into the vessel into which the discharge has been received, pour a quantity of boiling water at least 5 or 6 times that of the matter to be disinfected. Let it stand until cold. Failure to disinfect in this way may result if there is too rapid cooling of the vessel and its contents.

Or, a solution of chloride of lime (Solution 4), or Solution 8 may be used for this purpose, or Solution 7, double strength, adding to the excreta a quantity of one of these solutions at least twice as large as the volume of the discharge, and if Solution 4 is used, four or five times the quantity. Before the final disposal, the disinfectant should act three or four hours at least—the longer the better, and there must have been a very thorough mixing of the disinfectant and the material to be disinfected.

Hands.

The hands of the attendant upon the sick should be carefully cleansed after every handling of the patient or of infectious matter or infected things. Wash thoroughly with soap and water and then rinse the hands in clean water; but it is still better after washing the hands to soak them for one full minute at least in a disinfecting solution, Solution 8, preferably.

Disinfecting Bath for the Patient.

This is desirable for the patient who has had smallpox, scarlet fever, or other of the more serious of the infectious diseases before he is released from quarantine.

This disinfection of the patient may be by means of a sponge bath applied with a wash cloth or bathing cloth wet in Solution 8, one-half strength, or in a solution made by dissolving one tablet of bichloride of mercury (corrosive sublimate) in three pints of water.

The bichloride solution must not be made nor used in metallic vessels. The hair of a person receiving a disinfecting bath should be well moistened to the scalp.

Eating Utensils.

Disinfect forks, spoons, cups and all other eating utensils used by the sick one or carried from the room, by immersion in boiling water for 10 minutes or so. If that cannot be done, let them remain in Solution 7 or 8 twice as long.

Cotton and Linen Clothing.

Boil for at least ten minutes or soak in Solution 7 or 8. The clothing should remain in the solution ten or twelve hours and then be washed.

Woolen Clothing.

May be subjected to steam disinfection, or may be sprinkled plentifully with formaldehyde solution, and wrapped in a rubber blanket.

Steam disinfection can be done in the common wash boiler by supporting, above the water with two bricks or otherwise, a false flooring of lath or thin board. Pour in two or three inches of water, place the articles to be disinfected above the false flooring, put on the cover and steam one hour after the water begins to boil, keeping the water briskly boiling all the time. Replenish with more boiling water if necessary. Woolen clothing or cotton and wool fabrics which would be shrunk by boiling are not so badly injured by steam disinfection.

Bedding.

Throw straw beds out of the window. Empty out and burn straw. Then disinfect the tick as for cotton clothing. Disinfect feather beds, pillows, quilts, comforters, and blankets by steam disinfection when practicable, or if not soiled, with formaldehyde in large doses. Bed blankets, quilts, spreads and comforters, may be disinfected as for woolen clothing.

Rugs and Carpets.

It is important to disinfect these carefully. Small and moderate-sized rugs should be piled several in a pile and each sprinkled or sprayed plentifully with Solution 7 as it is laid in place. Then roll all together tightly and tie up the roll with twine at each end of the roll. Large rugs and carpets may be sprayed or sprinkled well or scrubbed thoroughly with a brush or broom dipped frequently into Solution 7 or 8. Then air out well with out-door exposure to the sunshine if practicable.

Lounges, Couches and Other Upholstered Furniture.

Scrub with Solution 7 or 8, using for the application of the disinfectant a hand-cloth or towel squeezed out after immersion in the solution, or a large brush dipped very frequently into the solution. Then, if practicable, expose to the direct outdoor sunshine a day or two.

Floors, Walls and Other Surfaces.

Floors may be scrubbed with Solution 7 or 8. If it is an old, loose floor the application should be plentiful enough to saturate the dust in the cracks.

The washing or wiping of walls or the surfaces of furniture with cloths wrung from a disinfecting solution—No. 7 or 8, suffices. Walls need no treatment unless infectious hands or excretions have reached them. If Solutions 7 or 8 are not available the scrubbing may be done with hot water and soap.

The Sick Room (A Preliminary Fumigation).

This should never be considered so essential a part of the work of disinfection as the methods described in the preceding paragraphs, and after this fumigation those other processes should be carried out as fully and carefully as is possible.

The first consideration should be arrangements for suspending, with no overlapping or folding, the blankets, quilts and other parts of the bedding and clothing which can be hung up. The way we may do this must vary somewhat with the differing conditions found in rooms; but the following may serve as a general statement of what may be done.

Look for windows and doors which are upon opposite sides of the room. From each end of a window-cap and from the center if need be, insert, with the householder's permission, a screw-eye (wire about one-eighth inch in diameter). Put screw-eyes similarly into the cap of a door or window upon the other side of the room. Through the screw-eyes run lines of hempen twine two-sixteenths or three-sixteenths of an inch in diameter. If need be, and if practicable, stretch a larger number of lines than the two or three.

For the suspension of the small articles, three or four lines may be stretched from the headboard to the footboard of the bedstead. The mattress should be left wholly uncovered.

Clothing and the lighter bedding in other rooms which may have been infected may also be suspended in the one room which is to be fumigated.

Upon the line nearest to the door from which the disinfectant is to escape, reserve a space for the suspension of a bed sheet, whole size. With all openings in the room tightly closed, the operator sprays upon the sheet all the full-strength formaldehyde (formalin) the sheet will hold without dripping much, a pint or more. If the room has much more than 1000 cubic feet of space, two sheets should be used.

The sprayer must be one which will distribute evenly the full quantity of formaldehyde solution upon the sheet in a very few seconds. Every health officer should have such sprayer and should keep on hand screw-eyes and heavy twine to be used in this kind of work.

Privy Vaults.

Solution 4 or milk of lime (Solution 5) may be used for this purpose. Gallon after gallon should be applied until the contents of the vault are saturated. Then after cleaning out and carting away, the whole inside surface of the vault or the ground should again be thoroughly saturated with the disinfectant.

Camps and Shacks.

Camps and other loosely-built structures require special treatment. In a lumber camp, for example, the boughs, straw, or other material serving as a substitute for mattresses should be cleaned out and burned. The blankets or spreads, stretched out their full length, should be slowly rolled by one person while another sprinkles them plentifully with Solution 7, preferably. If that is not available, the bichloride solution (Solution 6) or Solution 8 may be used. After the rolling of the spread is completed, it should be tied up and wrapped in a rubber blanket or other impermeable fabric if available. If it is not it should be tied tightly and the outer surface saturated with the solution.

The camps themselves should be disinfected by spraying very plentifully their walls with Solution 7 or 8 and sprinkling or spraying the floors so plentifully that the wooden or earthen floor is well wetted and that the dust and dirt in the cracks of wooden floors is completely saturated with the solution.

The clothing and other articles found in camps may be disinfected in accordance with the directions which have already been given for the disinfection of such articles.

DISINFECTING AGENCIES AND PROCESSES.

The work of disinfection may be done by means of physical agencies or chemical agents. The following are brief references to some of these disinfecting agents and processes.

Heat.

By burning infected articles or by boiling them in water, infection may be destroyed with certainty. Steam disinfection is just as trustworthy when intelligently done.

Burning.

The destruction by burning is an absolutely certain method (See "Discharges from the Nose and Throat"). It is sometimes necessary to have infected articles burned when such articles are of but little value and cannot be disinfected in a trustworthy way.

Boiling.

Cotton and woolen fabrics—handkerchiefs, towels, personal clothing and bed clothing—are disinfected with the greatest degree of certainty by immersion in water or soap suds and then boiling for not less than ten minutes. The water must be actually boiling for that length of time. Spoons, forks, and other eating utensils are also the most effectively disinfected by immersion for a few minutes in boiling water.

The Scrubbing Brush.

A thorough scrubbing with soap and water goes quite a long way in the work of disinfecting floors, walls, doors, furniture and other things to which this method of cleansing can be applied. Still more trustworthy is a washing which not only cleanses, but applies, at the same time, a chemical germicide of known value, Solution 6, Solution 7 or Solution 8, for instance.

Sunlight.

Direct sunlight outdoors in uncovered areas is rapidly destructive of disease germs. Indoors for the disinfection of rooms and their contents the light which is available is of far lower intensity and is limited in its germicidal powers. Exposure to the sunshine is desirable as supplementary to other processes of disinfection; for instance, rugs, carpets or upholstered furniture that have been disinfected as efficiently as is practicable by chemical agencies may be placed outdoors in the direct sunshine for a few days following their indoor disinfection.

Formaldehyde.

Formaldehyde fumigation by the liberation of the gas through the action of permanganate of potassium is now impracticable for the reason that the price of permanganate is prohibitive. A large variety of formaldehyde candles and lamps are upon the market but with none of these can the whole quantity of gas be liberated in a very few minutes as it must be to give the best results. None of these devices present efficient processes for room disinfection or for general disinfection.

The sheet method described in this circular should be ranked merely as an auxiliary in the work of cleaning and disinfecting at the termination of a case of infectious disease.

Formaldehyde Solution.

The commercial 40 per cent. solution of formaldehyde, rarely up to that strength, is too strong for general use as a disinfecting solution; but, diluted about one part to 20 parts of water (Solution 7), it is very efficient as a wash for

furniture, woodwork, and other things; for scrubbing floors, walls, carpets, rugs, and woolen clothing; and for soaking all linens or other washable fabrics. It may also be used for the disinfection of sputum and discharges from the bowels.

Sulphur Fumigation.

This is not an efficient method of destroying bacteria but the gas which is given off is very poisonous to all forms of animal life, high or low. It is, therefore, of special value as a method of destroying rats, mice, flies, fleas, and mosquitoes as carriers of infectious diseases and of destroying various other insect household pests.

The sulphur used may be either the flowers of sulphur or sticks or rolls of brimstone which have been crushed into a powder. It should be burned in shallow pots or pans which are placed in tubs of water, preferably covered with wire screen to catch any of the burning sulphur which may pop out. The sulphur may be lighted by means of hot coals but by far the most trustworthy way is to light it with alcohol—grain alcohol or wood alcohol. Hollow the sulphur out in the center and soak liberally with alcohol and then ignite it. When used for the destruction of insects, two pounds per 1000 cubic feet of space is sufficient with an exposure of from four to six hours.

It should be borne in mind in resorting to sulphur fumigation that wall papers, clothing or other fabrics colored with dyes of vegetable origin or with many of the analine dyes are bleached. It attacks most metals and lessens the tensile strength of various fabrics.

Carbolic Acid (Phenol).

The use of carbolic acid as a household disinfectant or remedy should be discouraged on account of its dangerously poisonous qualities. Neither should the health officer be encouraged to include it among his disinfecting agents for the reason of its extremely high cost at the present time and for the additional reason that it is very much outranked by some of the other chemical disinfectants which, while more efficient germicides, are not nearly so dangerously poisonous when accidentally swallowed.

Kreso, Etc.

The investigations which have been carried on in the hygienic laboratory of the Surgeon General of the Public Health Service in Washington have shown that Kreso, Coronoleum, and some of the other proprietary disinfectants are very efficient, more so than carbolic acid. But no disinfectant of this kind should be used unless, upon the bottle or other container, there is a plain statement of the carbolic acid (phenol) coefficient of the product. The figure which represents its coefficient indicates how many times stronger

than pure carbolic acid the disinfectant is. For instance, if, upon the bottle, there is the statement that the guaranteed coefficient is 7 or 15, the meaning is that the preparation is so much more efficient as a germicide than is carbolic acid, whose coefficient, one, serves as the standard for comparison.

Corrosive Sublimate (Bichloride of Mercury).

The popular use of this chemical as a disinfectant, whether in powder or crystals or in tablets, should be restricted for the reason that it is so intensely poisonous; because it coagulates albuminous matter and thus fails to penetrate material to be disinfected; and because it is destructive of metals and itself is reacted on by the metals so as to lose much of its efficiency as a germicide. Its sphere of usefulness is thus restricted.

Lime and Chlorinated Lime (Chloride of Lime).

These for certain purposes are trustworthy disinfectants. Their range of usefulness may be gathered by an examination of the preceding parts of this circular.

DISINFECTING SOLUTIONS.

SOLUTION 4.—Chloride of Lime, 6 ounces; water, 1 gallon. Mix. This is about a 3 per cent. solution. Decolorizes and destroys fabrics.

SOLUTION 5.—"Milk of Lime."—Slake a quart of freshly burnt lime in small pieces with three-fourths of a quart of water—or to be exact 60 parts of water by weight with 100 of lime. A dry powder of slaked lime (hydrate of lime) results. Make milk of lime not long before it is to be used by mixing 1 quart of this dry hydrate of lime with 4 quarts of water.

Air-slaked lime is worthless. The dry hydrate may be preserved some time if it is enclosed in an air-tight container. Milk of lime should be freshly prepared but may be kept a few days if it is closely stoppered.

SOLUTION 6.—Corrosive Sublimate, 8 ordinary tablets, or 1 dram. Water 1 gallon. Mix and dissolve. Label, *Poison!* This is approximately a 1:1000 solution. One ounce of this solution contains very nearly half a grain of corrosive sublimate.

SOLUTION 7.—Solution of Formaldehyde (Formalin), 6 ounces; water, 1 gallon. Mix. This mixture contains a little less than 2 per cent. of formaldehyde.

SOLUTION 8.—Upon 2 ounces (4 tablespoonfuls) of Kreso or Coro Noleum pour 1 gallon of lukewarm water. Shake or stir thoroughly.

For the disinfection of sputum or typhoid discharges use Solution 8 full strength. For other purposes use half-strength.

(c) When a case of infectious disease is reported to the health officer, he distributes pamphlets to the family. These pamphlets are gotten out by the State Board of Health, and explain the course of the disease, and the precautionary methods used in handling the case to prevent spread of the disease.

A sample of these pamphlets on disinfection is inserted here.

After the patient has recovered from the disease, the bed linen, quilts, blankets, mattresses, etc. are hung on lines in the sick room. The cracks about the doors and windows are stopped up, and the room is fumigated by the health officer who uses formaldehyde powder, for this purpose.

PHYSICIAN'S REPORT OF A CASE OF TUBERCULOSIS.

To the Local Health Officer of
(Town or City)

As is provided in section 9, Chapter 19, R. S. as amended by Chapter 27, Laws of 1919, I hereby report a case of tuberculosis to you.

1. Name of patient.....P. O. Address.....
2. This patient resides in
(Name of City, Town or Plantation. If City or Village, give street and number)
3. If a minor, give the name and P. O. address of guardian or head of family where patient is.....
.....
4. Birthplace of patient.....
5. Sex..... 6. Age..... 7. Single, Married, Widowed.....
8. Stage of disease..... 9. How long ill.....
10. Part of body affected.....
11. Evidence on which diagnosis is made.....
12. Name of Medical attendant.....
13. Will patient remain under treatment at home or go to a sanatorium or elsewhere.....
14. If not now under medical treatment, give the name of the physician or institution, if any, under whose treatment the patient
formerly was.....
15. Present occupation, what and where.....
.....
16. Condition of other members of the family.....
.....
17. What immediate help, if any, should the patient have.....
.....
18. What measures are in operation to safeguard his associates at home or elsewhere.....
.....
19. Person to whom the circulars of the State Department of Health may be sent (physician, patient, or legal guardian).....
.....

This notice is given by.....

Date of report.....

NOTE—When any part of the information required above cannot be obtained this fact should be shown opposite the question, otherwise this report will be returned for correction.

TO THE LOCAL HEALTH OFFICER.

As soon as the local health officer receives this notice he should make a record of it and then forward this notice to: Division of Communicable diseases, State Department of Health, Augusta, Maine.

The legislative provisions relating to the duties of physicians and local boards of health in connection with cases of tuberculosis may be found in Sections 9 to 17, of Chapter 19 R. S. (pages 104-106, Abstract of the Health Laws, 1919.)

Reports of cases of tuberculosis from physicians should be received as strictly confidential and so long as a patient is under the care of a physician the doctor should be expected and trusted to look after the welfare and safety of all the members of the family as is provided in Section 14.

If not already in his hands, the local health officer should order herewith any leaflets or circulars he may need for aiding and instructing families, in which there may be cases of tuberculosis.

Guarding Against Tuberculosis

Issued by the State Department of Health of Maine.

Two facts have been very clearly shown about that terrible destroyer of human lives, tuberculosis: that it is a contagious or communicable disease, and that it is preventable. The teaching of how to prevent it has cut down very greatly the tuberculosis death-rate and, with the wide diffusion of trustworthy information about guarding ourselves and in saving others from danger, a still better showing may be made.

The work of saving lives from tuberculosis must be followed out in two directions: (a) the saving of ourselves and others from exposure to the infection and (b) guarding against anything that may lower the health condition and thus lower the degree of immunity, or resistance which each person may have against the action of infection which may come from without, or from that infection which may already have found a lodgment within us.

For the source of infection, too, we must look in two directions: to human beings who have tuberculosis, and less frequently the infection may come from the use of milk from tuberculous cows.

Two Ways of Taking Infection.

As there are two lines of work in preventing tuberculosis, and two sources of infection, there are two chief ways of taking the infection into the system. A person may have the germ of the disease (the seed) planted in his system by breathing it in, or by taking it in by the way of the mouth. He may get the infection by breathing in the minute droplets of infectious matter sprayed into the air just around the coughing tuberculous patient, or by inhaling the infectious dust from dried and pulverized sputum (spit) when, on floors, handkerchiefs or clothing, it is disturbed by sweeping, brushing or shaking.

The infection comes to the mouth and digestive tract by anything which has been soiled by contact with what the

tuberculous person has coughed up—one's own fingers, the cups, spoons, forks, pencils, or other things that have been to the lips of tuberculous persons—and by the milk from cows with tuberculosis.

How Great is the Danger of Infection.

The danger varies very much with the age of the person exposed, the degree of exposure (that is the size of the dose of infection received), and some other conditions.

It is very near the truth to say that all infants, even of tuberculous mothers, come into the world free of infection and that they remain free of tuberculosis unless they receive the infection of the disease after birth.

Infants under two years of age are extremely susceptible to the infection of tuberculosis. They take it very easily, sometimes from a very slight exposure, and tuberculosis in them is pretty sure to assume a malignant and rapidly fatal form.

From the third to about the twelfth year the death rate from tuberculosis is lower than for the earlier years or for the higher age periods. The child has developed quite a degree of resistance, or immunity, so that if he takes in the infection, the disease assumes a much less serious form.

From the twelfth year there is a rapid rise in the tuberculosis death-rate, and from youth to old age tuberculosis claims many victims, the high mortality-rate at this period being due to the lighting up of old deposits of infection received in childhood, or less frequently to more recent sources of infection.

As during babyhood very slight and brief exposures may lead to disastrous results, the infant should be guarded very carefully from association with tuberculous persons, even those who are neat and careful, and from exposure to persons with a suspicious cough, particularly in elderly persons who are supposed to be troubled with only a chronic bronchitis or asthma.

Past the earliest years of childhood, the danger varies very much with the degree of exposure—whether intimately and continuously exposed, or whether the tuberculous person is careless or intelligently careful. Massive doses may break down degrees of immunity which exposed persons may have and so result in tuberculosis.

Tuberculosis in Many Forms

We are too much inclined to think of tuberculosis as a disease of the lungs only; but it may in fact invade any part of the body or any organ.

Tuberculosis in infancy almost always runs a rapid course as an acute general tuberculosis affecting the glandular system, very often the lungs; or, with symptoms of bronchopneumonia or inflammation of the brain, the baby may be carried off within a few days or a week or two.

After the child emerges from babyhood, tuberculous infection is often the cause of disease of the bones and joints, destroying the usefulness of the limbs or causing deformity of the spinal column, or tuberculous meningitis may destroy life, but more frequently the disease is localized in the glands of the neck and in the bronchial glands about the root of the lungs.

From the later years of childhood the rising death rate is chiefly due to tuberculosis of the lungs, though there is a great diversity in the type of this disease, the rate of its progress and in the other organs implicated in the tuberculous process.

It should be borne in mind that, in the beginning and in the progress of the disease, there are three stages: (a) That in which the infection has been received into the system but has as yet produced no distinct symptoms. In infancy this stage is usually short, but in the later years of life it may last months or years. (b) The stage of tuberculosis when symptoms, plain or obscure, indicate the beginning and the progress of tuberculosis. This stage may cover months or years. (c) The advanced stage of tuberculosis of the lungs commonly known as consumption.

Reading Danger Signals.

In the early stage of tuberculosis in children there may be no cough at all. The child is not robust, is likely to show symptoms of weakness and is tired easily when he plays too hard. Appetite may be poor. Such symptoms in children should remind one of tuberculosis and of the need of giving them the best of health conditions and of feeding them with nutritive and protective foods. (See Bulletin on "Food for the Family").

In the adult, through the first stage, while he is carrying the infection, the symptoms are so indefinite that the true

nature of the disease is recognized with difficulty. Without cough, bleeding, or anything as a distinct warning, there may be a poor appetite, he becomes more easily fatigued than formerly, and possibly he finds himself a little feverish after too much exertion. From the disease in this stage many persons recover without knowing that they had tuberculosis.

Quietly the disease may advance, extending itself into healthy tissue, or there may be a sudden transition so that the earlier symptoms may be more pronounced—a slight or moderate rise of temperature in the afternoon, particularly if undue exercise has been taken, a slight cough, perhaps only in the morning, poor appetite, loss of weight, bleeding from the lungs, night sweats.

In the great majority of cases of chronic tuberculosis the distinct remissions during which for weeks or months the patient feels comparatively well, followed by other periods of weeks or months through which the cough and other symptoms are worse, lead the patient and his friends wrongly to think that the bad spells are nothing but the result of a cold or grip.

In the later years of life tuberculosis often assumes a very slow and inactive form and may be thought to be nothing but a chronic bronchitis, the continuous cough and expectoration a constant source of danger to the other members of the household, particularly to the children.

In all cases of suspected tuberculosis when the person has a cough and is raising anything, samples of what is coughed up should be sent to the laboratory for examination. If the bacillus of tuberculosis is found that is positive proof of tuberculosis, but if it is not found, that does not prove that tuberculosis is not present, for the disease may be present for a while or even for a long time with the bacillus absent from the sputum.

Unfortunate, indeed, it is for the patient himself that the early symptoms are so frequently overlooked, for while tuberculosis is now classed with the curable diseases, the chances for a cure are very much greater in the earlier stages of the trouble.

Precepts for the Patient.

There are some very important things for the patient to know and always bear in mind. These are some of them:

1. The first and most important thing for the person who has tuberculosis or who has the symptoms that may mean tuberculosis is to know that he has it or probably has it; for every week that passes without a

change to the right kind of living and the right kind of treatment, brings him just so much the nearer to that last stage of the disease which we call consumption and in which the chances of cure are not nearly so good. The sooner he knows he has tuberculosis, the better.

2. The next thing for him to know is that tuberculosis is a curable disease. With early and intelligent management many more cases recover from it than are killed by it, counting from the early stages of the trouble.

3. If he has a cough and is raising, he must bear in mind that he is the center of distribution of a seed-supply that may endanger himself and others. Nature seeks to cure by getting rid of the original growth, but the uncleanly patient surrounds himself with an infectious atmosphere, one that is laden with the germs of tuberculosis sprayed into the air by careless coughing, or whisked into the air in the dust which comes from handkerchiefs, clothing, floors or other things that had been soiled with the spit. And he should remember that the greatest danger-point is the center of this infectious area, just where he is. There is need of the utmost care and cleanliness so that he may not be surrounded by this halo of infection, and, by breathing it in, possibly seed down other portions of his lungs not already infected.

4. To be safely clean in tuberculosis means the prompt disposal of every particle of tuberculous matter as it is coughed up so that there may be no soiling of hands, mouth, clothing, bedding, furniture, or floor. While coughing indoors, a piece of cloth or paper napkin should be held before the mouth and then burned. The receptacle for the sputum must have a cover so that flies may not enter it. It may be:

A. A paper cup held in a metal frame. After use the cup and its contents are burned. This receptacle, in use in the sanatoriums generally, is the preferable one.

B. Pressed paper spit-cups are on the market. One or several can be used daily and afterwards burned with cover and contents.

C. Metal or porcelain spit-cups or spittoons, each containing a small quantity of disinfecting Solution 8 or 2, may be used. The final disposal of the sputum may be:

1. By pouring it down the water-closet.

2. By cremation when practicable. (a) In a small fire outdoors. (b) In the house heater, using a stout sheet iron box with a handle three feet long. Partly fill the box with sawdust, or fold a paper inside it; pour in the contents of the spit-cup or cuspidor; with a direct draft and the heater open, invert the box over the firepot, holding the box in place a moment until the flame or the heat sterilizes it. When the sputum is to be cremated, but a small quantity of the disinfecting solution should be used in the spittoon.

3. By setting the vessel aside, preferably in a warm place, so that the disinfectant may act eight or twelve hours longer. The quantity of disinfecting solution should be in excess of that of the sputum. Then bury or otherwise dispose of it so that flies and domestic animals cannot reach it.

The patient should have two spit-cups or spittoons for alternate use. A cover should exclude flies. Cleansing can be done with washing soda and boiling water, or soap and hot water.

D. When away from his room the patient may spit into Japanese paper napkins to be put immediately into a rubber tobacco-pouch until they can be burned. But the fingers are pretty sure to be infected and as a general practice spitting into napkins or pieces of cloth is not to be recommended.

E. Spitting into handkerchiefs should be avoided. If occasionally forced to do this, the handkerchief should be boiled before the sputum dries. Handkerchiefs upon which the sputum is allowed to dry, surround the user with a halo of infection, infect the pocket and everything else they touch, and lessen the patient's chances of recovery. After coughing, the lips should not be wiped with the handkerchief used for the nose. The lips may be wiped with paper napkins to be burned later.

Repress cough as much as possible. Cough gently with the mouth closed as much as may be. Never swallow the sputum.

Do not soil personal or bed clothing with the sputum nor soil the hands when avoidable. Wash the hands often. Male patients, who wear moustache or beard, should keep it closely clipped.

Rules for Attendants.

The floors, woodwork, and furniture of rooms in which consumptive patients stay should be wiped with a damp cloth, not dusted nor swept in the dry way.

Clothing may be disinfected by boiling as in ordinary laundry processes. Rooms and their contents may be disinfected as is advised in Circular 220. Localized disinfection should be done often enough to keep everything free from infection, every week or every day if need be. If the floor or other surfaces are accidentally soiled with sputum, the spots should be wet and rubbed with Solution 8 or 2.

Rooms for persons with tuberculosis should have no fixed carpets. A few rugs may replace them. They should frequently be carried into the open air and exposed to the action of direct sunshine several hours at a time. For the thorough disinfection of them, or of woollen clothing and other things that would be injured by boiling, steam is the best—a false bottom of laths in the common tin wash boiler supported above the bottom with two bricks; two or three inches of water beneath the lath flooring and the articles to be disinfected above it. Put on the cover and steam one hour, keeping the water briskly boiling, all the time. The tableware of the patient, the knife, fork, cup and spoons particularly, should be kept separate and washed by themselves in scalding water.

The attendant, too, must also remember for his own safety, that, in addition to the danger from infectious dust if it is allowed to be diffused through the air, there are other possible ways of communicating the infection. It may be carried directly to the mouth by the fingers, or indirectly by handling articles of food. After soiling the hands, cleanse them carefully. Guard against inoculating cuts or abrasions of the hands with the sputum.

Rules for Everybody.

A. Anything tending to lower the tone of the general health may act as a predisposing cause of tuberculosis—insufficient or unsuitable nutriment, overwork, loss of sleep, worry, close and dusty air. Avoid these. Do not over-heat homes and places of business. From 65 degrees to 68 degrees F. is much better than higher temperatures. Habituation will make these lower temperatures comfortable. Live in the open air and sunshine as much as possible. Sleep with wide open windows as much as possible, protecting the body with enough clothing, and the top of the head if necessary in cold weather. In the morning open the bed and give it a prolonged airing and direct sunshine if practicable. In the daytime the open-window ventilation of sleeping rooms may be brief in cold weather, if "wide-open windows" is the rule at night. Wear only just enough clothing for comfort day and night. Avoid chest-protectors and extra heavy under-clothing especially if you live indoors much. Eat temperately a sufficiency of plain, nutritious food,—a fairly "well balanced ration." Helpful advice may be had from the bulletin of the Department on "Food for the Family."

Keep clean, but use cold baths only when a comfortable reaction quickly follows. Undue exercise may be dangerous if lungs are affected. If there is prolonged loss of appetite, of strength, and of weight, with or without cough, and without other plain cause, there is reason to suspect tuberculosis. If present, the sooner you know it, the quicker you can be cured.

B. Every new case of tuberculosis comes from some earlier case. The germs of this disease retain their vitality and their infectivity a long time under favoring conditions. Therefore do not bring into your house clothing formerly used by consumptives unless it has been thoroughly disinfected; do not move into an infected house or rooms, until the thoroughness of the disinfection of it is unquestionable; do not put to your lips or mouth, eating or drinking utensils, pipes, wind instru-

ments, money, or anything else that has been used or in the hands of consumptives; do not buy bread, milk, or other articles of food, not to be cooked that have been prepared or handled by tuberculous persons. Kissing, particularly lip-to-lip, is unsafe if one party to the act is tuberculous.

By strict observance of the rules which are expressed and suggested in the foregoing, the principal dangers of infection may be avoided.

The Cure.

For the residents of Maine who have lung trouble the most promising place for a cure is right here within their own state. Back from the coast a little, our year-round climate is better than that of many of the places which were in the past so much sought by the chasers of the climatic cure. Our summers have a favorable reputation, but patients under the sanatorium method of treatment in sanatoriums or at home under the care of their physicians, generally gain much more rapidly in winter than in summer.

Two things more frequently than any others work against the recovery of persons who have tuberculosis. One is that in so many cases of tuberculosis the true nature of the disease is not recognized while it is in the early stage, when it is much more easily cured than it would be later. The other is that many persons refuse to believe that they have tuberculosis until the evidence is so plain that the diagnosis of the physician is no longer needed.

The judgment of the physician that a person has tuberculosis, or probably has that disease, should be the signal for prompt action, by beginning treatment against the disease. All those changes that may be made in the direction of more healthful living will strengthen the resistance of the system against the action of the infection.

The lives of early tuberculosis cases are too frequently lost by consulting a second physician who pooh-poohs at the idea of tuberculosis when there is no positive evidence that the disease is not present. The diagnosis in the early stage of tuberculosis must and should often be made before the bacillus can be found in the sputum and before the examination of the chest can give any help. The physician is a life saver who promptly prescribes what may be required to prevent the incipient case of tuberculosis from becoming a plain case.

For many persons to whom it is available, the sanatorium treatment of tuberculosis of the lungs is more efficient and is usually better for the patient and his family than treatment at home. In the well-equipped special sanatorium the patient has the advantages of the constant care of the phy-

sician; the possibilities of the fullest outdoor life under congenial conditions; a specially nutritious diet; exercises regulated to the special needs of each patient or restraint from exercise when it would be harmful; baths for their curative influence; medical treatment, local or systemic, drugs or special apparatus as needed.

But many persons with tuberculosis must be treated in their homes, for the number of beds in the sanatoriums for tuberculous persons is much smaller than the number of such persons with us all the time. So, if an applicant finds that he cannot be admitted without delay, he should promptly begin to carry out at home the sanatorium method of treatment under the general care of his physician and aided in many important details by that circular of the State Department of Health on "How to Get Well From Lung Trouble."

Of the State Sanatoriums, one is in Hebron, one in Fairfield and one in Presque Isle. A patient wishing to receive treatment in one of the State sanatoriums should have his physician make the application on one of the blanks that may be had from the office of Dr. T. E. Hardy, Chairman, Board of Trustees, Waterville, Maine.

Beside these state institutions, and The Androscoggin Sanatorium in Lewiston, there is a private sanatorium for the treatment of tuberculous persons, the Maple Crest Sanatorium, East Parsonsfield, Maine. The medical director is Dr. Francis J. Welch, 698 Congress Street, Portland.

Disinfecting Solutions.

Solution 2. Lysol, 5 ounces; water, 1 gallon. Mix.

This, or still better, solution 8 may be used as a help in freeing the hands of infection, or for scrubbing up any spots on floors, furniture or other things that have been soiled by what is coughed up. Handkerchiefs or other uncolored fabrics may be soaked in solution 2 or 8 before they are boiled, and one of the solutions may be kept in metal or porcelain spit-cups or spittoons when these are used, but burning is the surest way of destroying fresh sputum.

Solution 7. Solution of Formaldehyde (Formalin), 6 ounces; water, 1 gallon. Mix.

This is not suitable for the disinfection of fresh sputum, but it may be used, as is more fully advised in Circular 220, for the disinfection of rugs, carpets, woolen clothing, lounges and other upholstered furniture, and floors, walls and other surfaces.

Solution 8. Upon two ounces (4 tablespoonfuls) of Kreso or Coro Noleum pour 1 gallon of lukewarm water. Shake or stir thoroughly.

For the disinfection of sputum use Solution 8 full strength. For other purposes use half strength.

(d) When the health officer is notified of a case of tuberculosis, he reports it to the State Department of Health, and then sends to the patient pamphlets, like the one shown below, instructing him in methods which will prevent the spread of his disease to others.

The abolition of public drinking cups with the substitution of various forms of commercialized paper ones has been a valuable method of reducing the incidence of the disease.

The law against expectoration on floors of public buildings and side-walks also is directed towards reduction of tubercular infection.

(e) The health officer was asked as to what measures he would institute in case of the outbreak of an epidemic. He seemed to have no clear idea of any line of procedure, but volunteered the information that he would close the schools and all public gatherings. Beyond that he would not commit himself.

(f) The reporting of venereal diseases to the health authorities is carried on by the attending physicians. When they learn of a case of venereal disease, it is their duty to report it directly to the State Health Department in Augusta. It is also his duty to report all cases who refuse treatment. In these cases the local health officer takes the necessary steps by law to force them to submit to treatment for the public good.

Only one such case has occurred in Storrmen during the past three years.

Various pamphlets for purposes of education in sex hygiene are given out mainly to high school students by the school nurse.

SCHOOLS.

Schools.

The school picked out for inspection was the Lincoln School. It is a red brick building two and a half stories high, with a basement in addition which runs under the whole structure. There are four school rooms two on each of the two lower stories. In the attic various school supplies are stored. There are two entrances one on each end of the building, but there is only one staircase leading from the second to the ground floor. In case of fire that might prove to be a bad feature. On the outside of the building, however is an iron fire-escape, which makes the absence of a second stairway more acceptable.

The school rooms all face the south and are provided with seven large windows each which afford all the light to be had. There is no special system of ventilation. Four times a day the windows are opened and the rooms given an airing. This is done during the recess periods and in the morning before school. The building is heated by steam which has proven very satisfactory.

In the basement are two toilets, one for the girls containing six seats, and one for the boys containing four seats and a urinal. The toilets are kept very neat and clean and no fault could be found with them.

School begins at eight-thirty in the morning, and lasts until eleven. In the afternoon, again from one-thirty to three-thirty. There is a morning recess and an afternoon recess of fifteen minutes each. Besides the recesses the children have fifteen minutes of setting up exercises a day. About once a term a fire drill is held.

The school is situated in a quiet part of the town in the midst of an extensive green lawn. Besides the lawn there is a playground of 5000 sq. ft. This gives the 150 school children more than their required 30 sq. ft. each.

The water supply comes from the West Aqueduct. The pupils each bring their own drinking cups.

Medical Inspection of the Schools.

Once a year as was outlined in an earlier section of this report the school physician and the school nurse make an examination of all the school children. This examination consists of the following:- height, weight, development, skin, eyes, ears, nose, throat, teeth, and heart. In the case of the pupils in the village schools the examination is given in the office of the school nurse in the Quere House. In the case of the pupils in the rural schools the examination is given in the school buildings.

A report of their findings for the past year is found below.

Children examined	995
Excluded	35

- Causes
- Pediculi
 - Scarlet
 - Whooping cough
 - Scabies

Defective	403
Parents notified	405
Undertaking remedy	143

A detailed list of the defects found is given below.

Defective Eyes	111	Corrected	14
" Ears	11	"	0
" Skin	10	"	10
" Teeth	170	"	110
" Almonds & Tonsils	168	"	9
" Heart	2	"	--
Under weight	54	Improved	39

124 children have been vaccinated during the past year. Pupils are excluded from school for the following diseases and are obliged to obtain a certificate from the school physician before returning: whooping cough, scarlet fever, measles, scabies and diphtheria.

The conditions found in the schools seem to be quite satisfactory, as much so at least as could be expected at this stage in the work. The following improvements are recommended:

That a sanitary inspection of the schools be a frequent duty of the health officer.

That a system of sanitary drinking cups be

The Cooperative Duties of School Officials and Teachers with the Health Officers.

ISSUED BY THE STATE DEPARTMENT OF HEALTH OF MAINE.

In the prevention and control of the infectious diseases there is a very great advantage in having a close and cordial cooperation of school officials and teachers on the one hand and of state and local health officials on the other. If one stitch in time saves nine, one prompt step by a teacher, for instance, in safeguarding the children under her care against the approach or the presence of a communicable disease, very often contributes in equal proportion to the welfare of her charges and of the community. Prompt and efficient action is also sure to prevent loss of school time and school money, losses which are too often very serious when that which should be done is not done quickly and efficiently. The presentation of the provisions of the health laws and the school laws and of the rules and regulations of the State Department of Health relating to cooperative action between school and health workers, and suggestions of such united activities, is the reason for this circular.

Circular 227, "The Characteristics of some of the Communicable Diseases," is kept in stock by the State Department of Health for the use of teachers, members of local boards of health and other local workers. Aside from circular 227, it would, very often, be a distinct help to the local superintendents of schools and to teachers in the larger schools particularly, if they kept on hand a copy of the "Rules and Regulations" relating to the infectious diseases.

Sections 58 and 59, Chapter 19 of the Revised Statutes, provides that teachers, school officers and local boards of health shall work together as follows:

Sec. 58. Children who have been exposed to contagion, shall be excluded from public schools. Whenever smallpox, diphtheria, scarlet fever or other contagious disease, shall appear in a town, the local board of health shall immediately notify the teachers of the public schools in the neighborhood of the fact, and all teachers and school officers when thus notified, or when otherwise they shall know or have good reason to believe that any such disease exists in any house in the neighborhood, shall exclude from the schoolhouse, all children and other persons living in such infected houses, or who have called or visited at such houses, until such time as the local board of health shall certify that such children or other persons may safely be readmitted.

Sec. 59. Schoolhouses, when infected, shall be closed. When persons from houses or places which are infected with any of the diseases for which disinfection may be required by the state board of health, have entered any schoolroom, or when, from any other cause, the schoolroom has probably become infected, the teacher shall dismiss the school and notify the school officers and local board of health, and no school shall be again held in such schoolroom until the room has been disinfected to the satisfaction of the local board of health, and the school officers and board of health shall cause the room to be disinfected as soon as possible.

The diseases in connection with which disinfection is required are: diphtheria, scarlet fever, typhoid fever, tuberculosis, poliomyelitis (infantile paralysis,) cerebro-spinal meningitis and smallpox. Rule 22, further provides that the disinfection shall be done in accordance with the directions for such work which may be given from time to time by the State Department of Health. Circular 220, "The Work of Disinfection," gives explicit directions.

In line with the statutory provisions relating to the cooperation of teachers, Rule 14 of the State Department of Health provides as follows:

"It shall be the duty of teachers and of principals of schools to note the condition or the symptoms of their pupils which are suggestive of the onset of a contagious or an infectious disease, and this particularly when a disease of this kind is prevalent or present in the community. Among the symptoms which should excite suspicion are those of a common cold or a cough when measles or whooping-cough are prevalent; tonsillitis or sore throat, which may mean diphtheria or scarlet fever:

or a rash at any time. The teacher or principal shall immediately report to the local health officer the condition of any pupil which is suggestive of a contagious or infectious disease and shall exclude such pupil from the school-room until he has been seen by the health officer or a physician. The teacher shall furthermore exclude from the schoolroom children from houses in which there is, or recently has been, a contagious or infectious disease until a certificate of readmission is received from the local health officer."

It will be noticed that the use of the word *shall* makes these provisions mandatory. The penalty provided in Section 65 of Chapter 19, is applicable alike to teachers and to local health officers who fail to do that which the law or the rules and regulations provide they shall do.

Under the school laws, Sections 43 and 44 of Chapter 16, are these important provisions for preventing the introduction of infectious diseases into the schools:

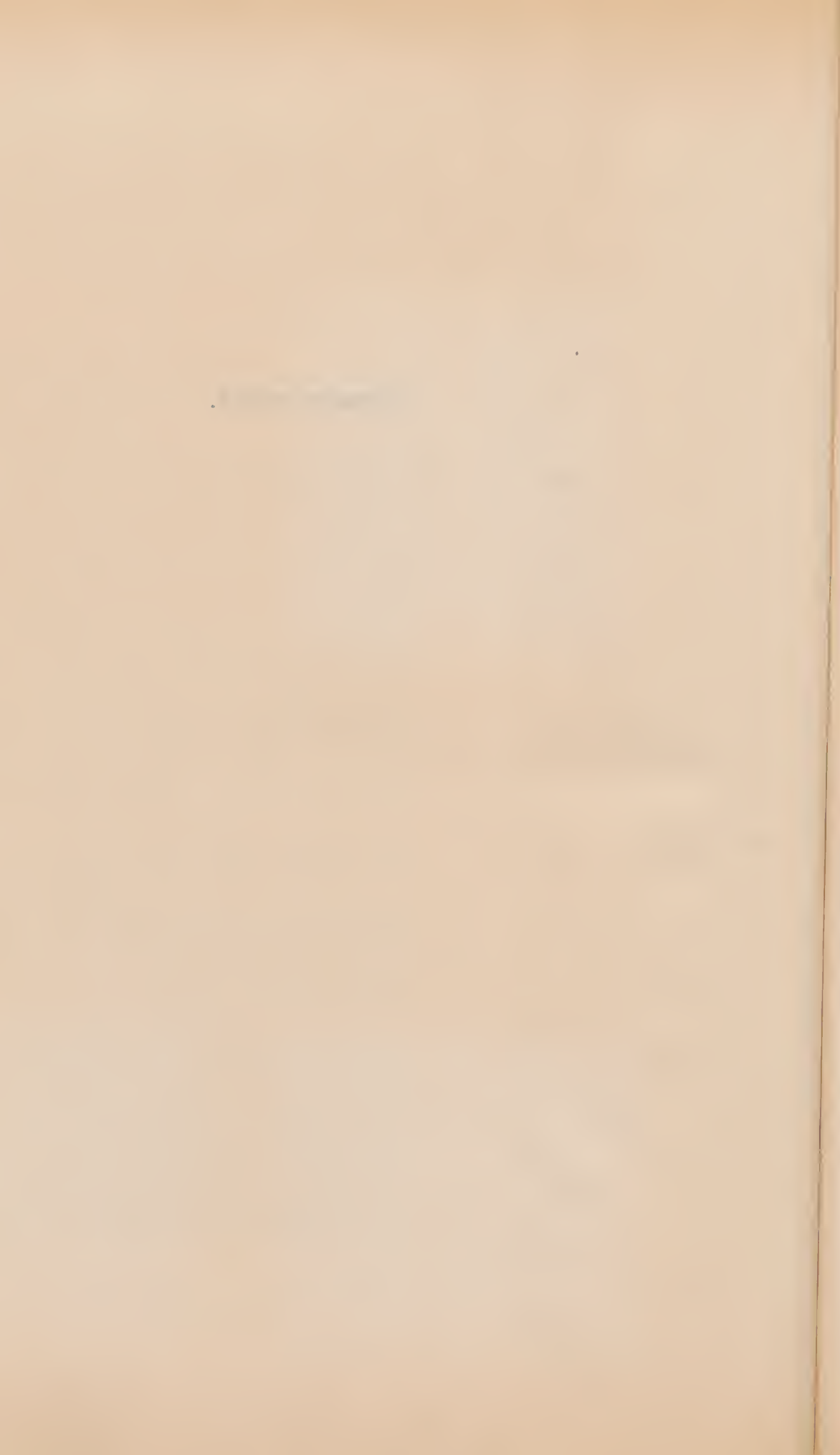
Sec. 43. Examination of pupils after absence on account of sickness. The superintending school committee shall cause to be referred to a school physician for examination and diagnosis every child returning to a school without a certificate from the board of health or family physician after absence on account of illness or whenever in the judgment of the teacher the circumstances of the absence were such as to require such a certificate, and every child in the schools under its jurisdiction who shows signs of being in ill health or of suffering from infectious or contagious diseases, unless he is at once excluded from school by the teacher; except that in case of schools in remote and isolated situations, the school committee may make such other arrangements as may best carry out the purposes of sections forty to forty-seven, both inclusive.

Sec. 44. Notice of disease or defects. The superintending school committee shall cause notice of disease or defects, if any, from which any child is found to be suffering, to be sent to his parents or guardians. Whenever a child shows symptoms of small-pox, scarlet fever, measles, chicken-pox, tuberculosis, diphtheria, or influenza, tonsilitis, whooping-cough, mumps, scabies, or trachoma, he shall be sent home immediately or as soon as safe and proper conveyance can be found, and the board of health and superintendent of schools shall at once be notified.

Unsettled.

That the large room should also be used as a play room for the children. Why limit them to 20 or even 60 sq. ft?

MISCELLANEOUS.



MISCELLANEOUS.

(a) The markets inspected were found to be in very good sanitary condition. There are no specific regulations or inspections, but competition demands that the stores be kept clean and pleasing to the critical buyer's eye, and that alone seems to be sufficient in this community to keep the markets in a very fair degree of sanitary perfection.

The markets are provided with icing facilities, two of them having very modern cold storage systems, single small units. The temperatures were sufficiently low, 40 degrees F. or lower.

The counters and benches were clean hard wood. The refrigerators were water tight and easily cleanable. Most of the meat sold is of western production, and is all inspected and stamped. The local meat sold is not inspected. The fish is iced and stored without hushness.

There is no particular uniform worn by the market workers, white aprons being the common article of apparel. In many cases these aprons were not as clean as would be desired.

(b) The provision stores were likewise found to be in very good shape. All food displayed outside was screened or covered with netting to keep the flies away. The delivery of food is done quickly and efficiently. The store windows are not completely closed in and allow the circulation of air. All the food stuffs are kept a sufficient distance above the floor.

The soda fountains are kept clean, and all unwrapped candies were kept under covers. The milk and ice cream is of good quality and prepared in the case of the plant inspected in as sanitary a manner as it would be made in a family kitchen. The utensils were scalded out after each batch and rinsed with running water.

(c) There are three slaughter house in Skowhegan, all of which are used only for the slaughter of locally raised animals. They are all rough unpainted structures, with rough wooden floors, unclean, and unsanitary. There is no pretense of sanitation. The tables and benches

are dirty and stained with blood from previous butchering. Knives and other implements lie around covered with clotted blood. The entrails are thrown into the yard to rot, and the stench from this material is very disagreeable.

Fortunately these slaughter houses are not extensively used.

The amount of butchering in the three slaughter houses is shown in the following table.

	Sheep	Calves	Pigs	Lambs	beefs
	-----	(per year)-----			
Thompson	0	600	100	600	100
Wescott	0	25	40	40	25
Easler	0	0	0	25	0



Thompson Slaughter House.



Wescott Slaughter House.



Easler Slaughter House.

(d) There are no cold storage plants in Showagan outside of the two small private plants above mentioned under "meats."

The next inspection has been closely discussed.

(e) The hotel kitchen inspected was in good sanitary condition. The floor and walls were well cleaned. It was well lighted by windows, and was equipped with a sufficient number of electric lights to make it well illuminated in the evening. It was equipped with refrigerators, and all the food was kept in a neat and cleanly manner. The kitchen was well screened, to keep out flies, and all garbage was carried away twice a week. The kitchen was supplied with both hot and cold running water.

There is no municipal inspection of kitchens in Showagan.

(f) There are no wharves in Showagan, it is needless to say, as it is far inland at a point on the river fifty miles from navigable waters.

(g) The barber shops are not inspected. They are kept neat and clean, but no efficient individual sanitary precautions are taken. They do not differ in this respect from any of the larger urban barber shops that I have seen.

(h) The distribution of educational pamphlets is carried on largely by the health officer and by the school nurse. Some of the pamphlets distributed have been shown, and others are given below:

Health of Home and School.

LEAFLET No. 1.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Cold weather diseases.

Pneumonia, bronchitis, grip, and common colds, are called cold weather diseases. In the last ten years, in Maine, these diseases destroyed in the four months, January to April, 8,332 lives and in the four months of settled milder weather, from June to September, only 1,976. Aside from these diseases there are other cold weather troubles. Many people do not winter out well. In the spring they find themselves all run down, so they say, and many children, pale and puny, are sent from the city to the country or to our health resorts in early summer, where they make wonderful recoveries.

What does that mean?

Does it mean that the climate of our cold season is of itself less healthful than that of our warm season? Perhaps, but let us see.

Explorers in the Polar regions have found those parts remarkably free from these diseases, and, returning, suffer from attacks of grip, colds, or of the other so-called cold weather diseases soon after coming back to civilization.

An influential gentleman of this state, after roughing it in our Northern Maine woods, came down promptly with a dangerous attack of pneumonia after he had been exposed to the stuffy air of an ill-ventilated hotel bed room.

In the northern sanatoriums for consumptives, where patients live in the open air and sleep in the open air through the inclement winters, properly protected by clothing, of course, these cold weather diseases are much less prevalent than in the homes from which they come, and besides they recover from their tuberculous disease much more rapidly in winter than in summer.

Then what is the cause?

Or, we should ask, what are the causes, for there appears to be more than one cause. We shall simplify matters if we place them under two or three general classes:

1st. Artificial conditions of our own making.

The most influential of these is undoubtedly foul-air poisoning. We fail to ventilate or "air out" our living rooms, sleeping rooms, school rooms, churches, and places of business. The air is robbed of its health-giving part—its oxygen—by the process of breathing, and also by the flames of gas or oil lamps. Still worse, respiration and combustion both add to the air matter which is actually poisonous and harmful just in proportion to the absence of ventilation and the stuffy condition of the rooms.

Then again, our stoves and furnaces give off dangerous gases because we do not manage them intelligently.

Another fault is that we generally keep our rooms too warm. The

temperature of our living rooms and school rooms should never go above 70° F., and not much below 68°. But the English think that 60° or 65° is warm enough for their school rooms. That is because they do not coddle their children in houses that are overheated as we do.

And we certainly do overheat our houses awfully. A temperature of 75° to 80° is debilitating, as cold air is a tonic and such overheated air is too dry for healthfulness. Kitchen air is usually better than living room air because the steaming teakettle adds moisture.

Again, in close, unventilated rooms, the infection of the infectious diseases, if any happen to be around, becomes dangerously concentrated. And such infections are around much oftener than most of us think. For instance, many of us carry the germs of pneumonia or of grip in the secretions of our mouth, nose, or throat when we appear to be perfectly well, waiting to master us when imprudently we reduce our natural powers of resistance, or gathering in force and thriving in the foul air of our rooms until they overcome other persons.

2nd. Infection.

The preceding paragraph is suggestive of this. These cold weather diseases are infectious diseases. The germ of grip (influenza) and that which causes most cases of pneumonia are well-known and have been studied well. Colds are plainly infectious, but are probably caused by more than one kind of infectious agent. So, we may say that the real cause, the essential cause, of these winter diseases, is infection, and that all other causes are merely exciting or helping causes.

3rd. The effect of a draft or chilling.

This properly belongs in class 1st. While living under normal conditions, low temperatures have no intrinsic tendency to cause these diseases. But with the body debilitated by unfavorable conditions, and the way paved by them, a draft may be dangerous. It may serve as an exciting, or contributory cause.

How may we prevent these diseases?

By ventilating or airing out rooms frequently. Of course it costs a little more for fuel; but it is a kind of life insurance that pays. School rooms particularly should have a good system of ventilation. Sleep at all times with open windows—wide open preferably, protecting against direct draft and protecting the top of the head if the hair does not suffice.

Do not spit all around, well or sick. Destroy with fire, or otherwise, what is coughed up or spit out by persons who have these cold weather diseases. Coughing as a fine art, when sick with these diseases or with tuberculosis, requires a piece of cheese cloth or paper before the mouth to prevent spraying infection into the air. Then burn the pieces. Remember your good manners, and do not cough into anybody's face or toward others. Remember, too, that loud open mouthed coughing is out of style nowadays and a nuisance. Repress unnecessary coughing. It will be better for you and for others. Do not be unusually chummy because you have a cold or the grip. Keep away from other people as much as you can. Acts of carelessness in these respects may slay our best friends, or cause them needless suffering.

Read this Leaflet No. 1 carefully, and then keep it to be filed with others to follow.

Health of Home and School.

LEAFLET NO. 3.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Parasites and Parasitic Diseases of the Skin.

This leaflet is prepared for the purpose of helping parents promptly to get rid of some of the parasites which the most frequently trouble school children,—particularly lice and the mite that causes itch. Both are quickly and easily gotten rid of if the caretakers of the children are watchful, and prompt measures are taken if the affliction occurs.

Head lice.

Head lice may promptly be destroyed with common kerosene. Pour a little into a small dish. Moisten a small rag with it. After squeezing the rag somewhat, moisten the hair with the kerosened rag. Do this in the afternoon, after the return from school, or in the evening. Before morning, the oil will have evaporated so that but little or no odor will remain; or it can be removed with soap and water. If it is wished to disguise the odor of the kerosene, pour a small quantity of kerosene into a vial, and pour one-fourth as much oil of sassafras in with it, or a smaller quantity. Shake a few times until there is a complete mixture.

Or, dip a small, clean hair-brush into kerosene oil or oil of sassafras poured into a shallow dish. Then brush and moisten the hair with it. An ounce or two of oil of sassafras costs but little. After any of these applications are made to the head, be very careful not to let the children go near fire or lights. For the night, cover the head with a cap or wrap a cloth around the head. A cap can be improvised by knotting the corners of a handkerchief. This treatment should be repeated several times to ensure complete destruction of the lice and nits. Applied as recommended, the kerosene is not in any way injurious to the scalp or the hair.

Body lice.

They must be killed by scalding the underclothing and the bed sheets and the blankets, following up this practice several times at short intervals if necessary. Clothing may be rid of these insect parasites or of other kinds, by fumigation with sulphur.

The Itch.

This disease is caused by the itch mite, which causes the trouble by burrowing under the surface of the outer skin. The cure of the disease is merely a matter of killing this parasite. The trouble can be cured by using one of the following preparations:

Balsam of Peru,

Lard,—take equal parts.

In a shallow plate with a steel table knife rub them together thoroughly, forming an ointment. Vaseline may be used in place of lard, still better, lanolin.

Flowers of sulphur, one tablespoonful,

Balsam of Peru, two tablespoonfuls,

Lard or vaseline, eight tablespoonfuls.

Mix and make an ointment.

With the palm of the hand rub one of these ointments thoroughly into every part of the body from the neck downward, or, at least, all parts of the body which are affected. Sometimes the only affected parts are, at first, the hands and the arms to the elbows.

To make sure work, particularly in bad cases, two or three applications should be made within twenty-four or thirty-six hours.

Just before the first anointing, the whole body should have a thorough scrubbing with soap and hot water. Dry the body well before the ointment is rubbed in. The same kind of a bath should be given twelve hours or so after the last application. Thorough scrubbing and cleanliness will of itself go a long way toward curing.

To avoid reinfection, a child must have clean clothes, particularly underclothing, and a change of sheets and blankets. If but one change can be made, it should be made at the time of the last soap and water bath.

In the ordinary process of washing, the itch-mite on all clothing will be destroyed when an abundance of soap is used and the water is near the boiling point when the clothing is soaking.

The old-fashioned ointment of sulphur and lard will cure, but it is unpleasant, more irritating and less rapidly curative than balsam of Peru. Pure balsam of Peru is sometimes painted on, or a good mixture is with glycerin half and half. To make them mix, fill a bottle half full, heat by putting the bottle in pretty hot water, then shake.

Ringworm.

Another contagious skin disease which sometimes makes trouble in schools is ringworm. It presents the appearance of a round patch, covered with fine scales and with a slightly raised, reddish ring around it or part of it. The advice of the family physician should be obtained, and his treatment should be followed carefully. When ringworm gets into the hairy scalp, its cure is difficult and prolonged treatment may be required.

Contagious impetigo.

When on the exposed surfaces, particularly on the face, hands or wrists, a simple looking pimple or pustule, enlarges in size and the patch becomes covered by a brownish or yellowish crust, and other patches have apparently been caused by the conveyance of infection by the fingers or otherwise from the original patch, medical advice should be taken. Contagious impetigo is sometimes rapidly spread in the schools, but it can be promptly cured by medical treatment.

Health of Home and School

LEAFLET NO. 4.

Issued by the State Department of Health of Maine.

The Danger of Uncleanliness.

We have been told that cleanliness is next to godliness. There is no question that habits of neatness and cleanliness have a desirable influence upon moral character, but the aim of this leaflet is to point out some physical dangers which are invited by habits of untidiness.

Uncleanliness of Earth.

Mother earth is cleanly in her instincts. If we let her have a decent chance, all impurity committed to her is rapidly made clean; but if we overburden her by pouring an excess of filth out upon the surface of the soil, or into the soil on or about the spot which we call home, we do that at our peril. The dangers of so doing are of two kinds:

1st. In the soil which is overburdened with the filth of slops, sink drainage, or soakage from outhouses, harmful and dangerous gases are formed. They pollute the air which we must breathe, and worst of all, our houses, heated artificially, act as a huge suction pump drawing these gases into cellar and up into every room of the house. Absolute proof has been obtained by careful experiments that gases liberated in the basement permeate the rooms on all the floors of a house no matter how tightly they are shut off from the basement. The gases of decomposition thus formed in unclean ground and sucked into houses are undesirable additions to the air supply for our lungs. So, observe this golden rule: keep clean the ground around the home and around the schoolhouse.

2d. From these same sources of filth, our springs and wells are polluted. The distance through which polluted soakage finds its way to wells or springs varies very much with the character of the soil or rock. It sometimes finds its way into wells for almost incredibly long distances. So this again emphasizes the necessity of obeying strictly the rule: keep sources of filth from the near vicinity of the home well or the school well.

Unclean Water.

There is no reason for wholesale condemnation of the farmer's well or the village well. Properly constructed and cared for, its water is, in this State, almost invariably good and wholesome. But many well waters which are clear and sparkling are nevertheless dangerous. In cholera times in London, the people came from far and near to get the water of the Bond Street well because they thought it so good and pure. But the death from cholera of a multitude of people was traced to this well. So the infection of typhoid fever coming from neighboring sources of filth brings typhoid fever and the hearse and the undertaker to many homes in Maine every year.

Unclean Air.

Leave a room or house shut up closely for only a day or two and the air becomes stuffy. Air to remain pure and health-giving must be unconfined. Stagnant air is a menace to health. In occupied rooms, the occupants are continually giving off from lungs and skin and clothing harmful gases. Lamps, oil-stoves, gas-stoves and other heaters not well managed, are continually spoiling the air. Remembering how potent the outdoor air is in bringing back to health persons stricken with some dangerous diseases, we should take this fact as an emphatic hint that pure air is even more potent and more successful in preventing disease than it is in curing it. And it should nudge our memory to keep the air of our school-rooms and our homes and that about our homes as pure and fresh as possible.

Unclean Food.

The uncleanness of food endangers us in two ways as does the uncleanness of water: (a) by the harmfulness of the uncleanness itself, and (b) by the infectious matter which accompanies the filth or is transported to the food by it.

(a) The black sediment in the bottom of the bottle of dirty milk is unappetizing and is undoubtedly unwholesome, whether the milk is or is not sterilized by heating. The same may be said of the uncleanness, as mere dirt, which adheres to the products which come from the dirty baker, marketman or confectioner; but there is another question beside the one of filth itself. Filth and infection are twin demons of evil who often go hand in hand—the chief of those human ills which escaped when Pandora opened her fateful box.

(b) Fed to the babe unsterilized, the sediment in the unclean milk with its disease germs from the intestinal canal of the cow or elsewhere, may give rise to a dangerous attack of diarrheal disease. The 400 or more deaths from infantile diarrhoea every year in Maine emphasize the danger from filth-borne infection, and not so much the danger from the filth itself.

Again, through unscreened windows and doors, the summer fly on his way from dirty places dots our food with filth. This filth often leaves the germs of typhoid fever or other infectious diseases upon our food. Milk, boiled potato, and various other food stuffs are excellent culture grounds for the rapid multiplication of these disease germs. Thus, dirty food becomes infectious food, and there is good reason to believe that many of the cases of typhoid fever are thus caused by flies.

And again, a careless person caring for a patient with typhoid fever, diphtheria, or tuberculosis may carry on her fingers which have not been carefully washed the infection to the food which she prepares for herself and others. These are some of the ways in which unclean food may endanger or destroy us.

And still again, some persons, with no suspicion of it, are infection carriers and from their own persons their fingers may become contaminated with the infection of diphtheria, typhoid fever or other serious diseases. The careful washing of hands before meals and before handling food to be eaten by oneself or by others is not only an esthetic habit but sometimes guards against dangers.

It should be remembered always that the unclean earth beneath and around our homes, unclean water, unclean air, unclean food, unclean houses, and unclean persons are serious dangers to health and life, and that the training of ourselves into systematic habits of overcoming these evils is only a reasonable and necessary kind of insurance against the immense trouble, cost, and sorrow which we are so often called upon to pay for our neglect of these important matters.

So let us practise and preach the gospel of cleanliness,—personal cleanliness, domestic cleanliness, and municipal cleanliness.

Health of Home and School

LEAFLET NO. 5.

Issued by the State Department of Health of Maine.

The teeth and their care.

The state department of health issues this leaflet because this matter is so closely related to health and welfare.

Bad effects of diseased teeth.

The work which the teeth and mouth should do is a very important part of the work of fitting the food for the nourishment of the body. Aside from the desirability of reducing the food to minute particles, a sufficient prolongation of the act of chewing is necessary so that the finely ground food may very thoroughly be mixed with the saliva. One important function of the saliva is to change the starchy elements of the food into maltose, a kind of sugar. Unless it is so changed, it is not made available for the nourishment of the body. If diseased teeth are sore or tender, chewing will not be well done; if many are absent, it cannot be properly done, and indigestion and its attendant ills may result.

But that is not the whole story of the evil results of having bad teeth. Bacteria of dangerous disease-producing character are often found in the mouth. If they find there a lodgment, they multiply and produce their poisons. In the cavities of diseased teeth and about the tartar that adheres to the teeth they do find lodgment where they generate their poisons in abundance. They not only give the mouth a foul odor, but the poisons which these bacteria form are absorbed into the system from the mouth and from the stomach, and the bacteria themselves often penetrate farther into the tissues of the mouth, or are distributed through the circulation of the blood. The experience of physicians and dentists has forcibly focused their attention upon the fact that this gradual absorption of poisons from diseased teeth—this slow poisoning—is a frequent cause of ill health of serious character, and that in most cases there is a rapid improvement in health after the teeth and mouth are put into a more healthy condition.

Again, diseases of the teeth often extend to the gums and the jaws, and from those new sources there is sent out other purulent supplies with their accompanying bacteria. While this is only a partial enumeration of the ills of diseased teeth, it should suffice to emphasize the fact that a healthy mouth filled with sound teeth is well worth working for.

The growing of good sets of teeth.

This is in good part work for the mothers. Foundations for them are made or marred to some extent by the food which children receive. But, aside from the question of nourishment for the teeth, there is a question of their proper use and exercise. Exercise is just as necessary to the proper development and healthful maintenance of the teeth and the tissues into which they are set as of any other part of the body. But, in these days of breakfast foods and mush, there is a superabundance of soft foods and not enough requiring vigorous chewing, so the teeth, the jaws, and the mouth fail to develop properly and to maintain their normal condition, thus unsightly irregularities of the teeth result. There is reason to believe that the evil effect of insufficient chewing extends even to the anterior and posterior nasal passages and may have something to

do with the presence of troublesome adenoid growths which are often the cause of mental backwardness in children.

The temporary teeth.

It should not be thought that, because the temporary teeth are not to last for a life-time, it makes but little difference whether they are well cared for or not. If they are extracted or lost prematurely the adult jaws do not properly develop and the permanent teeth are likely to be crowded and irregular, thus being unsightly and subject to early decay.

The cause of the loss of the teeth.

Heredity and prenatal influences have something to do with the durability of the teeth, as does the food of the child during the formative period of the temporary and permanent sets. But the exciting cause is chemical action due to faulty care of the mouth and teeth. Particles of food remaining on or between the teeth ferment or decompose and form acids. These acids, acting pretty continuously in badly-cared-for mouths dissolve the structure of the teeth, and after a while the nerve pulp is exposed, and then follows the full train of symptoms, pain, ulceration, abscesses, loss of teeth, etc.

For the want of care, the teeth may also be lost by the accumulation of tartar and the resulting inflammation of the gums and absorption of the sockets of the teeth. The teeth may also be injured by the use of foods which contain too much acid, or by injurious tooth preparations.

How to save the teeth.

From early childhood the habit should be formed of giving the teeth regular care. With a tooth-brush and water, and preferably tooth-powder the teeth should be cleaned carefully and thoroughly. Use a tooth-pick, a soft, smooth one, only when it is necessary to remove particles which cannot otherwise be easily removed. Clean the teeth the last thing before bedtime, and again in the morning. Clean the mouth and teeth thoroughly after every meal if possible.

How to use the tooth-brush.

The brush with bristles of uneven length is best. Rinse the mouth first with water, then use the brush with water alone. A tooth-brush and water with no tooth-powder of any kind cannot wear well-formed teeth. Use a tooth-powder (described later) only once or twice a day. Brush all the surfaces of the teeth, especially the backs of them and the spaces between them. In brushing the teeth the gums should not be avoided; moderate friction helps to keep them healthy.

The kind of tooth-preparation to use.

There is reason to be shy of many on the market. Better ask your dentist, or be on the safe side and use nothing but some precipitated chalk or magnesia so finely powdered as to be entirely without grit. This may or may not be flavored with one or more of the aromatic oils, cinnamon, sassafras, peppermint or oil of wintergreen.

When to see the dentist.

Do not wait until filling or extraction is necessary. Arrange with him to examine your teeth at least twice a year and to advise you. It is better and cheaper for you to enlist his services in the prevention of trouble rather than to wait and give him the larger operations which will be harder for you and cost more.

Health of Home and School

LEAFLET NO. 6.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

What everybody should know about tuberculosis.

Leaflet No. 2 told about the terrible cost and waste and suffering caused by tuberculosis. This will teach briefly how to avoid and how to prevent tuberculosis.

Tuberculosis is an infectious disease.

It is not rapidly infectious, as are many of the communicable diseases; but there are about 5000 persons in our state who at any given time have tuberculosis, recognized or unrecognized. The infection from them, under circumstances which are favorable to it, may remain virulent months or years; and so many of us are exposed to infection under varying circumstances—for these reasons, 1000 or more of us in Maine every year die the death of consumptives.

Whence comes the infection ?

Most cases of human tuberculosis come from the infection from other human beings. The infection in a much smaller number, in children particularly, comes from the milk of tuberculous cows.

How the infection is spread.

Fix distinctly in mind that there are three principal ways in which human infection goes from the sick to other persons:

1. What is spit out by the person who has tuberculosis gets upon the floor, furniture, bedding, clothing, handkerchiefs, and, after it becomes dry, is pulverized, is whisked into the air by brooms or dusters or by human movements, and is then breathed down by other persons.
2. When the patient coughs, he sprays minute droplets into the air and the infection in these while still floating in the air is breathed down by other persons near him.
3. Spoons, forks, cups, pipes, pencils, or any other things which have been to the lips of a person with tuberculosis, are extremely dangerous to other persons and unless they have been scalded or otherwise sterilized most easily and quickly give the disease to others.

Predisposing causes.

The infection (bacillus) is the real cause, the indispensable cause. When a person receives infection into his system, a battle begins between the invading bacillus on the one hand and the defensive forces of the body on the other. If the dose is massive enough, it may bring down the strongest, the most resistant person, but almost always the issue of the battle, whether in recovery or death, will depend upon the outside influences which are brought to bear. Pure air, good nourishing food, and not too much exercise, help toward recovery.

But, on the other hand, impure, heated and dusty air, insufficient or unsuitable food, alcoholic drinks, overwork, and excesses of any kind, are some of the influences which help the infection to overcome its victims. These or anything which tends to "run down" the system may act as predisposing causes.

Tuberculosis is a preventable disease.

Everywhere—in nation, state, or city—where the people have engaged in earnest work against tuberculosis, the death-rate from that disease has been reduced. In Maine, the tuberculosis death-rate is now one-third less than it was in 1892. Taking into account the estimated increase in the population of our state in the interval, there are now 500 fewer deaths from tuberculosis than there would have been if the death-rate had not been diminished. This fact should encourage us to a more vigorous fight against this greatest enemy of our welfare.

How may we further lower the death-rate ?

The following may be put down as the most important things to do:

1. The further extension of the educative work is the first thing. The teaching that tuberculosis is an infectious disease, but that it may and should be controlled and prevented should be presented to every family in the land until this is grasped as a truth to be acted upon.

2. Every person who has tuberculosis should at all times strictly carry out the rules laid down by the state board of health to guard against giving the infection to others. He should do it voluntarily or be compelled to do it. The careless cougher or the careless spitter endangers himself and everybody else near him. On the other hand, the intelligently careful one need not be shunned, but should receive the help and sympathy which he deserves.

3. It should be felt to be everybody's interest to insist upon compliance with the provisions of the new and good law of the State of Maine against tuberculosis.

4. Sleeping with open windows at all seasons of the year should become a general custom.

Some special rules.

For the prevention of tuberculosis the following rules should be remembered and observed:

1. The person who coughs should, when practicable, and when near other persons, hold before his mouth a piece of paper or cloth to be burned afterwards.

2. For the reception of the sputum, paper cups, which with their contents, may be burned, are the best. Local boards may furnish them to needy persons at the expense of the town.

3. Spitting on floors of living-rooms, factories, public buildings and cars is too dangerous to be allowed. The sputum of many persons unsuspected of having tuberculosis is dangerous. There should be a strict enforcement of the penalty of the law for such practices.

4. Public drinking cups in schools, railway trains and elsewhere, are dangerous and should be avoided.

5. The eating and drinking utensils used by persons with tuberculosis or with cough should not be used by other persons until they have been washed by themselves and scalded with boiling water.

6. A tuberculous patient should keep his hands scrupulously clean. Infected fingers carry infection.

7. Sputum should not be exposed to flies. The first flight therefrom may be to food products or food preparations.

8. Children associating with tuberculous persons are especially endangered, particularly infants in arms or upon the floor. Their fingers wipe up infection from various sources and carry it to their mouths.

9. Tuberculosis is a house disease. Indoors, the infection may remain virulent a long time. Outdoors, the direct sunshine is pretty rapidly destructive of the bacillus. Thorough disinfection of infected rooms and things as the law provides should be the invariable rule.

Tuberculosis is a curable disease.

In the earliest stage, nearly all cases of tuberculosis might be cured. But there are four great mistakes which are every year drawing hundreds of infected persons into the maelstrom from which there is no rescue: (a) Waiting for the symptoms of "consumption" (the advanced stage) before suspecting tuberculosis is present. (b) Failure to seek competent medical advice and treatment early. (c) Failure of the physician frankly to say that tuberculosis is present or suspected. The person who knows early and accepts the truth is he who has the best chance for speedy recovery. (d) Trusting to patent medicines. And these four resolve themselves into one fatal error, loss of time.

The symptoms which should lead to a suspicion of tuberculosis, particularly if there has been exposure to tuberculous infection, are: a "run down" feeling; loss of weight; cough lasting a month or more, even if slight, or noticeable only mornings; increase of temperature afternoons; spitting of blood or streaks of blood in sputum, night sweats.

Every family in which there is a case of tuberculosis, or in which it is suspected, should have Circular No. 54.

Health of Home and School.

LEAFLET No. 7.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

The Eyes and Their Care.

No words need be wasted to convince anybody what a calamity blindness is; but there is a long list of misfortunes and handicaps which may be the result of eye-strain due to defective conditions of the eyes, which may be remedied; or to the use of the eyes under wrong conditions: Severe headaches frequently recurring and extending over many years; epilepsy; chorea, neuralgia, dizziness and various other nervous troubles; mental backwardness of children; lateral curvature of the spine, due to faulty positions which improper lighting or defective eyes cause pupils to assume; etc.

Faulty Conditions of the Eyes.

The diseased or abnormal conditions of the eyes which are found in the schools most frequently are:

Near sight (myopia). This is due to a bulging out of the posterior part of the globe of the eye. With improper use, this trouble is likely to be progressive and this giving-way of the tissues of the eye at this point may give rise to various dangerous changes in the eye which may seriously affect its usefulness or may even cause blindness. The near-sighted eye is always a diseased eye.

Far sight (hypermetropia) is due to a condition just the reverse of that in myopia. The antero-posterior diameter of the eye is too short. In other words the eye is too flattened.

In some eyes there is an irregularity of the curvature of their refracting surfaces. For instance, the curvature in the perpendicular plane may be greater than that in the horizontal plane. This is astigmatism.

Eyes in which these troubles occur are always, in reading or other work, under a disadvantage and a strain when these conditions are not corrected with suitable glasses. For instance, with astigmatism there are two points on each retina at which the rays of light come to an imperfect focus, and the unaided eye is vainly trying to merge them into one.

Aside from these faulty refractive conditions there are sometimes abnormal conditions of the muscles inside or outside the eye, whose use is to focus the eye and to regulate its visual axis. This unbalanced condition of the muscles, results in convergence or divergence of the eyes, or one may rise above the other.

Schoolroom tests may detect many of these abnormal conditions of the eye, and if found or suspected the pupils should be examined by a physician who is a trained eye specialist and who can judge of the interrelation between the eyes and diseases or disturbances in other parts of the body, as well as being able merely to fit glasses.

Effect of School Work Upon the Eyes.

School work, under unfavorable conditions, has a strong tendency to bring on diseased conditions of the eyes. The unfavorable conditions may be due to faults of the eyes which should be corrected by glasses, or to

wrong methods of lighting schoolrooms. Referring to one disease of the eye only, it is found that the percentage of pupils troubled with myopia increases with the number of years in school; and the grade of the myopia also increases with the grade of the school. That is, it increases from class to class. For instance, in France there was very little myopia in the lowest classes, 17 per cent. in the intermediate, and 46 per cent. in the most advanced classes. In some of the colleges it was much worse. The same serious condition has been found in the schools in other European countries and in this country.

It is found also that defective conditions of the eyes come on more rapidly in schoolrooms which are improperly lighted.

Right and Wrong Schoolroom Conditions.

In the schoolroom the eye is the organ which is the most severely taxed. The eye should therefore have the best possible conditions arranged for its work.

The principal light in the schoolroom should come from the pupils' left. The very best lighting is when the light all comes from the left, provided the schoolhouse can be so placed that the light comes from desirable points of the compass. The next best is with the principal light from the left with a smaller glass area at the rear.

Light from the right of the pupil is bad for the reason that the pupil's hand, in writing, throws a shadow upon his work. Light from right and left gives troublesome cross-lights which are trying to the eyes. Light in front of the pupils is absolutely bad and should never be tolerated. The windows at the left which supply the principal light should be massed with the narrowest possible spaces between them.

Direct sunshine should not fall upon or near the pupils' desks, nor come into the schoolroom during school hours. The best light comes from the east, north-east, north, or north-west. Light from the southern windows should be moderated carefully by curtains during school hours when the sun is shining.

To ensure sufficient light, the glass surface of the windows should equal one-fifth, and still better one-fourth, that of the floor surface. (Figure it out for your own schoolroom.)

Blackboards between windows or near them are bad for the eyes. Eyes are strained when the student is forced into improper attitudes by desks and seats not properly fitted to him.

Various Suggestions.

If the eyes of an infant, four weeks old or less, become inflamed, report the case at once to a physician. There is a stiff penalty for not doing so, and well there may be, for one-third of all cases of blindness are caused by the want of prompt action in these infantile cases.

A person with inflamed eyes should have wash bowls and towels of his own, and otherwise should be extremely careful not to let other persons catch his trouble. Many inflammations of the eyes, particularly purulent inflammations, are very contagious. Never poultice an eye. There is extreme danger in doing so.

Pain in or over the eye is a danger signal which should receive prompt attention. In persons past middle life, pain and perhaps dimness of vision may mean a disease which sometimes destroys the sight very quickly, and always pretty surely if not relieved.

Gradual dimness of vision, usually without pain, may presage Bright's disease, cataract, or other serious local or general disease.

Health of Home and School.

LEAFLET NO. 8.

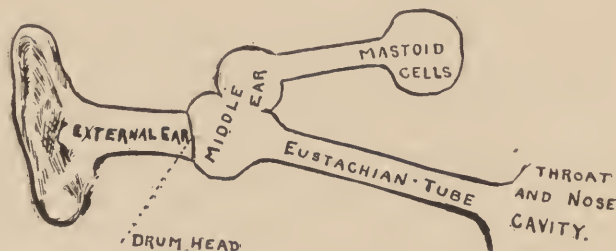
ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Troublesome and Dangerous Ear Diseases.

People generally have but little idea of the unfortunate results and of the dangers which very often follow earache, inflammation of the ear, and "runnings" from the ear when neglected. That is why this leaflet is prepared.

Structure of the Ear.

That part of the ear which stands out from the side of the head and collects the sound waves is a useful part, but not the essential part of the organ of hearing. This diagram does not pretend to show correctly the shape of the internal structures of the ear, but it does, better than a correct picture would, give an idea of the relation of the various parts to one another and to the throat and nose. It does not show at all those parts which form the internal ear.



The outer passage of the ear, about an inch inward, is closed by a membrane stretched tightly like a drumhead. It is, indeed, called the drumhead of the ear. The cavity beyond that is called the drum of the ear or the "middle ear." It has no outward communication except with the upper cavity of the throat and nose through the Eustachian tube. Beyond the drum is the third cavity, called the "internal ear." The nerve of hearing is distributed within this.

Troubles of the Outer Ear.

Insects may crawl into the ear. When they do so their fluttering or scratching against the drumhead of the ear causes such a noise and so unpleasant a sensation as wildly to excite the child. Warm water or sweet oil poured into the ear drowns the insect and floats it out.

Foreign bodies lodged in the ear are not nearly so dangerous as unskillful efforts at their removal, which often cause rupture of the drumhead or partial or complete destruction of hearing in that ear. Their removal is work for the physician.

Boils sometimes form in the skin which dips down into the outer ear passage. They are often very painful. They and other troubles of the external ear are sometimes caused by the use of the ear scoop, toothpicks, hair-pins, or other things used in the outer passage of the ear. With such things the outer passage of the ear may be infected or the drumhead of the ear may easily be injured or even ruptured. Never use anything in your ear or scratch it with anything but your elbow, is the good advice which the old doctor gave.

Diseases of the Middle Ear, (the Drum of the Ear).

Diseases of the middle ear usually result from unhealthy conditions of the throat or nose. Adenoids or enlarged tonsils may be the cause, or a chronic catarrhal process which may extend to the Eustachian tube. Closure of that tube removes the air pressure from the inner surface of the drum-head, while the pressure from the outside continuing, bulges the drumhead inward and hardness of hearing results.

Acute Inflammations.

But the main purpose of this leaflet is to tell about some acute troubles which endanger life as well as hearing.

The inflammation of the nose and throat caused by a severe cold or by an attack of the grip may extend upward through the Eustachian tube to the middle ear. When that occurs the inflammation of the lining of the tube often closes the passage through it so that the purulent or other fluids forming in the middle ear cannot escape into the throat. The pressure of these pent-up secretions often breaks through the drumhead and the fluids are discharged externally. These "risings in the head" or "abscesses in the head," as the trouble is sometimes called, should be regarded as a serious matter. The severe earache may cease as soon as the rupture and discharge takes place, but the danger continues. But it should be remembered that infants may have serious inflammations of the middle ear without indicating the fact by crying. Right back of the ear is a bony prominence, the "mastoid process." It contains cavities or cells which are connected with the middle ear; and the inflammation often extends from the middle cavity of the ear to those cells. And these cells are close to the base of the brain. The great danger to life is the extension of the inflammation to the brain or its membranes.

When the inflammation of the mastoid cells occurs, a serious surgical operation is often required to save life; but in the greater number, this operation is not done and life is lost by the extension of the inflammation to the coverings of the brain, or by abscess of the brain, or by disease caused by the extension of purulent or infectious matter to other parts. This happens so frequently because parents do not understand how great the danger is.

And just as long as a discharge from the ear goes on, this serious danger hangs over the child; and the discharge is more and more destroying the hearing.

Greatest Cause of These Troubles.

A common cold may start this chain of disastrous results; but the great sources of it are the infectious diseases, particularly measles, scarlet fever, diphtheria and grip; though the infection which lights up these dangerous ear troubles may be that of whooping cough, mumps, pneumonia, erysipelas, tuberculosis, or smallpox.

During an attack of any of these diseases, particularly of any of the four first mentioned, great care should be taken to prevent the extension of the infection to the middle ear.

The infection may be blown directly in through the Eustachian tube by blowing the nose. Hence the urgent need of cautioning the patient to abstain from acts which may cause so much trouble.

The inflammation is not so likely to extend to the ear if the throat and nostrils, in infectious attacks, are kept clean with mildly antiseptic washes; but if applied with the nasal douche, there is extreme danger of the fluids penetrating to the cavity of the middle ear, thus carrying infection; and this danger is not wholly absent in using some of the hand sprayers. This treatment should be under the supervision of the attending physician.

Please save these leaflets so you may have a full set of them for reference. Many more are to be printed.

Health of Home and School.

LEAFLET NO. 9.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Cuts and Other Wounds.

A surgeon who was in the war of the rebellion, comparing the treatment of wounds at that time with the treatment which wounds received in the Spanish-American War about forty years later, remarks that, in that earlier war, antiseptics were not used; no attempt was made to sterilize the part to be operated on; or the surgeon's hands, or his instruments; in the hospitals the nurse went from patient with the same pan, sponge, and dressing instruments unsterilized.

In the Spanish-American War every man carried a little package the "first aid," containing gauze and bandages and other necessities for the immediate dressing of wounds, and which could be applied at once by the man himself or by his comrade. In the work of the surgeons there was as rigid an adherence to the rules of cleanliness as possible.

The results are, while in the Civil War there was a death-rate of twenty-five per cent. from gun shot wounds, in the Spanish-American War the death rate from the same kind of injuries was only six per cent.

First Aid in the Home.

Twenty-five per cent. of the wounded dying in the Civil War, and not one-quarter as many in our later war should set us to thinking. In Leaflet No. 4 you have been told something about the danger of uncleanness in and around the home. This leaflet is to show the danger of continuing in the old unclean ways of taking care of cuts and other wounds, and to tell, how, in the home or at school, to apply the "first aid" dressing.

Sources of Danger.

If cuts and other ordinary wounds are clean and are kept clean (surgically clean), they will heal quickly and there will be only slight inflammation, no "festerings," or formation of pus, or blood poisoning, or other serious results; but if their treatment is not in accordance with the laws of strict cleanliness, dangerous results may follow slight cuts and scratches, the prick of a thorn or a splinter, or the bite of an animal.

The skin protects the tissues beneath it against injuries and excludes germs which, when they have a chance, cause inflammation, suppuration, blood poisoning, lockjaw, erysipelas and gangrene.

The germs which produce these dangerous conditions or diseases come from unclean things causing the wounds; from the dirty condition of the skin through which the wounds are made; from unclean hands which handle or dress the wounds; from water which has not been sterilized by boiling before it is used for washing wounds, or water in unclean basins, or applied with unclean sponges or cloths; from dirty substances which are applied to wounds; and from unclean (unsterilized) cloths or compresses or bandages applied to wounds in dressing them.

Of unclean things, the teeth and claws of cats and dogs when they cause wounds always carry through the skin possibilities of serious danger; old nails or sharp stones in or upon the earth carry with their dirt the danger of lockjaw because the germ of that awful disease lives in the soil, particularly unclean soil.

Of unclean skins, that of the most cleanly person sometimes harbors in its scales or meshes the dangerous germs of suppuration; and the skin of the boy celebrating the Fourth often supplies the germs of lockjaw which the exploding cap of the toy pistol drives through the skin.

Of unclean substances applied to wounds, puff balls to stop bleeding, or any other materials which have been exposed to dust and dirt are dangerous.

The Domestic First Aid Package.

In a clean wide-mouthed bottle with a clean stopper, keep a half pound of boric acid for use on man or beast. It will not cost much.

Sealed up in clean paper wrappers keep a supply of compresses of different sizes made of surgical gauze all ready to use at short notice. The surgical gauze can be had from the drug stores, or the compresses can be made of cheese-cloth or old soft linen or cotton which has been washed and then boiled, and then, on clean plates, has been dried in an oven and left there exposed for several hours to as great a degree of heat as may be without scorching or burning it. It would be still safer if these compresses and the sterilized cheese-cloth are wrapped inside of several thicknesses of sterilized cheese-cloth before the paper wrappers are put on.

Get from the druggist also an assortment of sterilized bandages from one to two inches wide and of different lengths. They come in air-tight packages and should never be opened until they are to be used.

Get from the druggist also four ounces of creolin. Have it labeled "Poison."

Keep these things all closed up tightly away from dust in a special clean box where they may quickly be found when needed.

How to Use Them.

If in the home or school an accident occurs and the skin is cut or torn, the first consideration is the question of cleanliness of the wound and its surroundings. If it is a clean cut made with a clean knife or other instrument, simply apply the dressing as soon as bleeding has ceased. Unnecessary and unskilful washing or handling may infect a wound which at first is all right for favorable healing.

But if the injured part were dirty, or cut or torn by anything which would be likely to carry dirt,—the kick of a horse, or cuts from nails or stones on the foot of the bare footed boy, for instance,—one teaspoonful of creolin should be poured into one quart of water in a clean bowl or basin. We will call this the "creolin wash."

First, the person attending to the dressing of the wound should wash his hands, his fingers particularly, very thoroughly with soap and water. Then soak the fingers three or four minutes in a little of the creolin wash. Do this so the fingers may not carry infection to the wound.

Next, wash out the wound very carefully with the creolin wash and wash also the surrounding skin. Do the washing with a piece of clean cotton cloth or cloth made safe by pouring boiling water over it, or by soaking in the creolin wash. If creolin is not at hand use water which has been boiled and then cooled.

Then, after the parts have dried, apply the dressing. In applying it, take a piece of the sterilized cheese-cloth or surgical gauze large enough so that, folded about eight thicknesses, it will cover the wound and extend beyond it one or two inches. Sprinkle the wound plentifully with the boric acid. Sprinkle with the boric acid that side of the compress which is to be applied to the wound. Use from a quarter to a level teaspoonful or more. Apply the compress. Apply evenly and smoothly a bandage to hold the compress in place. Leave the dressing in place until the doctor comes, or, if medical aid cannot be had, leave it undisturbed for two or three days if the wound is apparently doing well, and if there is no soakage of the compress and bandage indicating suppuration.

In redressing, simply apply more boric acid with a clean compress and bandage if the wound is free from suppuration and is apparently healing favorably. If not, cleanse with the creolin wash, proceeding as with the first dressing.

For domestic use the dry dressing is best. Do not cover wounds with "sticking plaster," collodion, "new skin," or any such stuff. They are dangerous. Strips of adhesive plaster may, however, be used to hold other dressings in place and are often very useful for that purpose.

Health of Home and School.

LEAFLET NO. 10.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Simple Bandaging.

This leaflet will speak of only two forms of bandage, the roller bandage and the triangular bandage. The roller bandage in skilled hands, may smoothly be applied to almost any part of the body. Leaflet No. 9 has advised that a collection of bandages from one to two inches in width be kept prepared in every home.

To apply a roller bandage as is shown in Fig. 1, take a turn or two around the wrist, then over the back of the hand, then around the palm, then the back of the hand, the wrist again, thus proceeding in carrying the folds around in a figure of 8 style until the hand and fingers are sufficiently and smoothly covered. When that is done, carry the folds from the wrist upward over the arm. On account of the increasing size of the arm it will be necessary to make reverses as is shown in the cut, thus making it possible to apply the bandage everywhere with smooth and even pressure.



FIG. 1.

In applying the roller bandage to many parts of the body, as the wrist and hand, the ankle and foot, the elbow, and the knee, it can be put on smoothly by carrying the turns around in the form of a figure of 8

The Triangular Bandage.

For many uses the triangular bandage is simpler and is often to be preferred for domestic use. To make it, take a square piece of cloth of sufficient size. Cut it in two from one corner to the opposite corner as is shown in Fig. 2. This makes two triangular bandages. The right angle of the triangle we will call the point and the two acute angles the ends of the bandage.

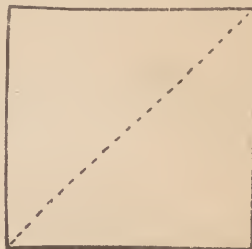


FIG. 2.

A Sling.

The triangular bandage can be used as a sling for an injured arm, the knot being tied back of the neck, and the broader part of the bandage supporting the arm.

The Scalp Bandage.

Place the base of the triangle across the forehead and bring the "point" over the head to the back of the neck. Cross the bandage at the back of the head and then bring the two ends around and tie in front. The point is then drawn up so as to fit the scalp closely and is then pinned with a safety pin.

The Hand Bandage.

In case of a cut or other injury to the hand the triangular bandage is to be folded to the required width. Bring the middle of the bandage across the palm of the hand and carry the ends around across the back of the hand and then around across the front of the wrist to be tied at the back of the wrist as is shown in Fig. 3.



FIG. 3.

The Foot Bandage.

Place the base of the triangle around the back of the heel. Pull the point of the bandage out in front of the toes, thence over the top of the foot. The ends are crossed in front of the ankle, then under the arch of the foot, and finally brought up and tied over the instep. See Fig. 4. But a well-applied roller bandage is better.



FIG. 4.

The Ear Bandage.

To apply a triangular bandage to the ear fold it so that it will be of sufficient width. Bringing the center of the bandage around the side of the head to which the dressing is not to be applied, cross it at the ear over which it is wished to apply the compress then bring one end over the top of the head, the other beneath the chin and tie at that point where the center of the bandage was applied. See Figures 5 and 6.



FIG. 5.



FIG. 6.



FIG. 7.

The Bandage for the Eye.

Place nearly the middle of the bandage over the injured eye; then carry the ends around the head, cross them at the opposite side and bring them forward again so as to tie the two ends a little to one side of the injured eye. See Fig. 7.

The illustrations in this leaflet, all but Fig. 1, are from that excellent little book, *Emergencies*; Gulick Hygiene Series, Ginn and Company, Publishers. Through the courtesy of the author and the publishers we are permitted to use the cuts.

Health of Home and School.

LEAFLET NO. 11.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE

How to Stop Bleeding.

Every person should have an idea of just what to do, and how to do it quickly, if required, to stop bleeding which may result from various kinds of cuts and other injuries.

Study this leaflet carefully and remember what it teaches. It may help you to save a life sometime, perhaps your own.

Bleeding may come from an artery which has been cut or otherwise severed. If from an artery, the blood will be of a bright red color, and if the cut end of the artery is uncovered, it will flow in jets and spurts, corresponding to the beats of the heart.

Or the bleeding may come from the veins, when it will be of a dark red color and its flow will be continuous and steady.

In other injuries the bleeding comes largely from that finest network of blood vessels through which the blood finds its way from the smallest twigs of the arteries into the minutest veins which converge to form the larger veins, carrying the blood back to the heart.

Bleeding from an Artery.

If a very small artery is cut the bleeding may be stopped by applying a compress and, by means of a bandage, applying pressure to the injured parts, as will be described farther on.

If a larger artery is opened a little bit of knowledge of anatomy—where the main blood-vessels run, may be required to enable a person to stop the bleeding. Sometimes deep pressure with the fingers or with the thumb placed just above the cut, that is on that side of the cut which is nearest to the heart, will control the bleeding.

But, if the cut artery is of considerable size, the only sure way of controlling the bleeding is to find some point along the course of the artery where it can be pressed between the thumb and an underlying bone.



FIG. 1

Fig. 1 shows, by the dotted line, the general course of the main artery of the arm and the point at which pressure may be made so that the artery may be compressed between the thumb and the bone of the upper arm.

There is only one point at which the flow of blood through all of the arteries of the upper limb may be controlled by pressure, that is just where, rising upward from the chest, the artery curves over the edge of the first rib. That point is just behind the collar bone, as is shown in the upper part of the cut where the thumb is exerting pressure at the proper point. In spare persons particularly it is easy, with the finger at this point, to feel the beating of the artery. Each pupil should learn it for himself so as to be ready quickly, in a case of emergency, to render help of this kind.

At the point in Fig. 2 where the hands grasp the thigh and the two thumbs make pressure upon the main artery of the leg, is one point where the circulation through the arteries of the lower limb can be controlled.

There is another point where this large artery can be more effectively compressed. It is midway between the forward point of the hip and that central point where the pelvic bones come together in front. At this point the artery rises out of the pelvic cavity and passes over what may be termed the edge of the bony basin. Here the artery may be compressed directly between the thumb and the underlying bone.

Sometimes, when a large artery is cut, the life of the patient will depend upon the coolness of comrades or bystanders and the knowledge which they have in regard to where pressure should be applied. And in such cases it may be necessary to maintain the pressure without cessation until the doctor arrives. If fingers or thumbs tire, the injured person can himself sometimes aid for a little while in maintaining pressure.

In many locations in the arm or leg the bleeding may be stopped by applying a small hard pad or compress over the artery above the cut and then tying loosely around the limb a handkerchief, so that a stick may be inserted and with that the bandage can be twisted until the pad makes hard pressure upon the artery.

In other cases where the severed artery is small the pad may be placed directly over the wound and a roller bandage applied as is taught in Leaflet No. 10, thus exerting pressure directly over the lips of the wound.

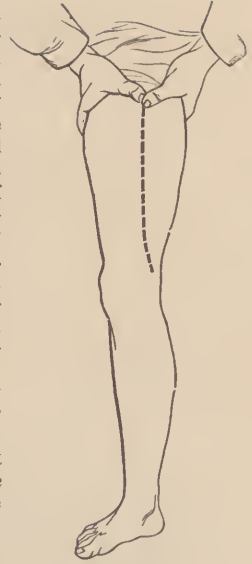


FIG. 2

Bleeding from Veins.

When the bleeding comes from veins there is usually not so much difficulty in checking it. Generally the best way to do, until the doctor arrives, is to apply a compress or pad as is described in Leaflet No. 10, and by means of a roller bandage bring pressure upon the surface from which the blood is flowing.

When the bleeding is slight all that is required to check it is the exposure of the cut surface to the air.

Bleeding from the Lungs.

Bleeding from the lungs may be slight and consist simply in the streaking of the matter which is coughed up, or it may be copious and alarming. In the treatment, quietude of mind and body should be the rule. The patient may be reassured by telling him the truth that generally there is but little immediate danger.

The affected person should recline quietly with the chest somewhat raised. He should abstain from talking. He should not, under any consideration, be hurried or carried to the doctor's office, but if medical aid is available it should come to him.

Bleeding which comes from the air passages almost always indicates the presence or the beginning of tuberculosis of the lungs and its occurrence is often a fortunate event by calling the attention of the patient and the attending physician to the probability that a tuberculous infection is present.

Nosebleed.

Bleeding from the nose usually ceases after but little delay; but if it is profuse or threatens to continue long, treatment should be begun.

The head should be held as high as possible. Sometimes pinching the nostrils with the thumb and finger suffices, exerting pressure for some time until clots form at the point of bleeding. The clots should not be blown out or otherwise disturbed, uncomfortable though they may feel.

Another suggestion often made is to raise the arm on that side from which the bleeding comes. Other expedients are the hot bath for the feet and legs, and the application of very cold water to the nose and lower part of the forehead.

Keep this leaflet for future use.

Health of Home and School.

LEAFLET NO. 12.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Infection Carriers.

The whole world of medical and of public health research is moving swiftly. It is rapidly discovering truths which are of the greatest value to us all about the causes of diseases, their prevention, and their cure.

One thing which has been brought out more clearly of late years is, that it sometimes happens that a person who appears to be well or only slightly sick, may carry the infection of dangerous diseases in his system and thus be a danger to other persons.

There are several ways in which this may happen :

1st. The person may have had, in its usual form, the disease which the particular kind of infection usually causes, and he may have recovered fully, but the infection (the germs of that disease) still continue to develop and multiply in his system. He is therefore still a source of danger to other persons.

2nd. A person has received into his system the infection. It multiplies and is given off freely, thus endangering other persons; but he himself remains in full health. He has no symptoms whatever.

3rd. A person receives the infection; that is, he becomes infected. But he has only slight symptoms and the disease is in so mild and irregular a form that there is difficulty in saying what the trouble is.

Thus the same kinds of infection received into the systems of different persons may produce symptoms of varying degrees of severity, or there may be a complete absence of symptoms.

So, in preventing the spread of infectious diseases, there is this newly-found danger to keep in mind. Aside from guarding against the spread of infection from persons sick with the plain forms of these diseases, and from the things and houses and places which they have infected, we must remember the possibility of these infection carriers. And that is a very serious danger. That accounts for many cases of infectious diseases which continue to spring up long after the health officer thinks that, according to the rules of the game, they should stop.

And now a few words about "infection carriers" for the several infectious diseases :

Diphtheria.

The germ of diphtheria (the infection, the diphtheria bacillus), finding its way into the throat or nose, multiplies, as the seed does which falls upon fertile soil with warmth and moisture to its liking. The germ may simply multiply and not make the person sick. It does not make him sick because he is *immune*, that is, he cannot take the disease even though he receives the infection. But he is an infection carrier. He is dangerous to other persons, though the infection is not dangerous to him.

Again, the diphtheria infection may grow and multiply and cause a slight sore throat, or quite a severe inflammation of the throat, which does not look like diphtheria. In these cases, the person with the sore throat is a dangerous infection carrier.

The third kind of diphtheria infection carrier is the person who has had diphtheria in its plain form and has recovered. He may appear to be entirely well, but the infection still lingers in his throat or in the cavities

of his nose. While it does, he, too, is a dangerous infection carrier of this terrible disease.

There are, thus, three kinds of diphtheria infection carriers. Persons may also, of course, carry the infection in their clothing or in other infected things.

It sometimes happens that cases of diphtheria keep springing up in a school or a community after every required precaution has apparently been observed. Such continued outbreaks are most likely due to an unrecognized mild case of diphtheria or a person who is a walking manufactory of diphtheria infection.

And how shall the person who is thus probably innocently spreading sickness and death be found out? It can only be done by sending to the laboratory samples from the throat on small swabs of sterilized cotton which have been applied to the throat and then enclosed in glass tubes. But this is work for the doctors and the health officers.

And only in the same way—by the help of the laboratory—can it be known, in many cases of throat disease, whether they are diphtheria or not; and in no other way can it be known how long the infection remains in the throat if it has been diphtheria.

It is much better for the public safety to have the period of quarantine depend upon the length of time the diphtheria infection remains in the throat and nostrils than to have a fixed period of quarantine, and it is better for the affected families generally, for, in all except a few exceptional cases, families may be released from quarantine earlier than under the other rule. The laboratory of the State board of health is continually doing work of this kind for local boards of health.

Typhoid Fever.

There are also typhoid infection carriers: persons who have the disease in a very mild form, who perhaps walk around meanwhile all the time spreading infection, and persons who, some weeks or months, or even years ago, had typhoid fever and continue, in their kidneys or intestinal canal, or gall bladder, to offer a favorable field of growth for the infection (the typhoid bacillus). The discharges from such a person endanger other persons in his household and in his neighborhood.

Scarlet Fever.

In scarlet fever, there are also infection carriers. There are cases of sore throat, sometimes very mild and sometimes somewhat severe, with no rash whatever, and still these attacks may be caused by the infection of scarlet fever. They are, in fact, cases of scarlet fever. These cases may spread infection which produces typical and malignant scarlet fever.

After the recovery from scarlet fever is apparently complete, a discharge from the nose or ear, or a continued sore throat may spread infection.

Cholera.

Just now, as this leaflet is in preparation, that dread disease, Asiatic cholera, has come to the Port of New York. Just a few cases have developed from infection carriers. Just as persons who have not had a plain attack of typhoid fever, or who have recovered from an attack, may spread typhoid fever, so may a person who has not had cholera or who has recovered from it continue to pass infection and spread the disease.

Tuberculosis.

A tuberculous patient is not a source of danger unless he is coughing up or otherwise discharging the infection of this disease. But there are many persons with a chronic cough who are spreading tuberculous infection without knowing that they have tuberculosis.

Keep these leaflets all together. Try to have a full set.

Health of Home and School.

LEAFLET NO. 13.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

To Save Life After Drowning, Electric Shock, and Other Accidents.

In drowning there are two things to be done, and to be done quickly: Empty the lungs of water, and restore breathing. Work quick and fast, and if need be, work long. One minute lost or saved may make the difference of a life lost or saved.

Rule 1. Lose no time in recovering the body from the water. Always try to save life; for while ten minutes is usually the limit, persons have been saved after being under water for 30 or 40 minutes. Do not lose time in taking the body to a place of shelter. Begin the life saving work at once.

Rule 2. Promptly, and without a moment's delay turn the individual upon his stomach on the shore or other land. Place the face turned to one side so that the nose and mouth are clear and unobstructed.



FIG. NO. 1.

Rule 3. Kneel by the side of, or astride the hips of the victim, face toward his head. Place both outspread hands upon the small of the back, just over the shortest ribs, and with the arms straight pitch the weight of your body and shoulders forward, the pressure being downward and slightly forward. Thus exert pressure three seconds. [See Fig. 1]

Rule 4. Swing backward, suddenly releasing pressure, but keeping the hands in place. Rest two seconds. [See Fig. 2.]

Rule 5. Repeat pressure three seconds, and release two seconds, so that the artificial emptying of the lungs, and refilling of them may be at the rate of twelve times a minute.

This method, called the prone pressure method or the Schaefer method of resuscitation, at once expels water and restores the mechanical movements which are present in the act of natural respiration. The hands grasping the lower portion of the chest and carefully placed over the two lowest, the

floating ribs, throws upward the abdominal organs against the diaphragm, and that in turn expels the contents of the lungs. Then by the relaxation of the pressure for two seconds, the natural elasticity of the chest walls causes the chest to expand, and the air rushes in to fill the lungs.



FIG. NO. 2.

When only one person is present his whole time should be given to artificial respiration. That is the one important thing. If there is a second person, have him see that the victim's mouth is free from gum, tobacco, false teeth, blood or mucus. He should see that the tongue is forward and that nothing constricts the neck.

After breathing has commenced, restore the animal heat. Wrap him in warm blankets, apply bottles of hot water, hot bricks, or anything to restore heat. Warm the head nearly as fast as the body, lest convulsions come on. Rubbing the body with warm cloths or the hand, and slapping the fleshy parts may assist to restore warmth, and the breathing also.

Beware.

Avoid delay. A moment may turn the scales for life or death. Dry ground, shelter, warmth, stimulants, etc., at this moment are nothing,—artificial breathing is everything,—is the one remedy,—all others are secondary.

Do not stop to remove wet clothing before efforts are made to restore breathing. Give all your attention and effort to restore breathing by forcing air into and out of the lungs.

Before natural breathing is fully restored, do not let the patient lie on his back unless some person holds the tongue forward. The tongue by falling back may close the windpipe and cause fatal choking.

Prevent friends from crowding around the patient and excluding fresh air; also from trying to give stimulants before the patient can swallow. The first causes suffocation; the second, fatal choking.

Do not give up too soon. You are working for life. Any time within two hours you may be on the very threshold of success without there being any sign of it.

In suffocation with smoke, any poisonous gas, by electric shock, or by hanging,—proceed the same as for drowning, omitting effort to expel water, etc., from the windpipe.

Health of Home and School.

LEAFLET NO. 14.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

The following instructions for saving drowning persons by swimming to their relief and the treatment of frost bites are those which are recommended by the United States Life Saving Service.

Swimming to the Relief of Drowning Persons.

1. When you approach a person drowning in the water assure him with a loud and firm voice that he is safe.

2. Before jumping in to save him, divest yourself as far and as quickly as possible of all clothes; tear them off if necessary; but if there is not time, loose at all events the foot of your drawers, if they are tied, as, if you do not do so, they will fill with water and drag you.

3. On swimming to a person in the sea, if he is struggling do not seize him then, but keep off for a few seconds till he gets quiet, for it is sheer madness to take hold of a man when he is struggling in the water, and if you do you run a great risk.

4. Then get close to him and take fast hold of the hair of his head, turn him as quickly as possible onto his back, give him a sudden pull, and this will cause him to float, then throw yourself on your back also and swim for the shore, both hands having hold of his hair, you on your back and he also on his, and of course his back to your stomach. In this way you will get sooner and safer ashore than by any other means, and you can easily thus swim with two or three persons; the writer has even, as an experiment, done it with four, and gone with them 40 or 50 yards in the sea. One great advantage of this method is that it enables you to keep your head up and also to hold the person's head up you are trying to save. It is of primary importance that you take fast hold of the hair and throw both the person and yourself on your backs. After many experiments, it is usually found preferable to all other methods. You can in this manner float nearly as long as you please, or until a boat or other help can be obtained.

5. It is believed there is no such thing as a death grasp; at least it is very unusual to witness it. As soon as a drowning man begins to get feeble and to lose his recollection, he gradually slackens his hold until he quits it altogether. No apprehension need, therefore, be felt on that head when attempting to rescue a drowning person.

6. After a person has sunk to the bottom, if the water is smooth, the exact position where the body lies may be known by the air bubbles, which will occasionally rise to the surface, allowance being of course made for the motion of the water, if in a tideway or stream, which will have carried the bubbles out of a perpendicular course in rising to the surface. Oftentimes a body may be regained from the bottom, before too late for recovery, by diving for it in the direction indicated by these bubbles.

7. On rescuing a person by diving to the bottom, the hair of the head should be seized by one hand only, and the other used in conjunction with the feet in raising yourself and the drowning person to the surface.

8. If in the sea, it may sometimes be a great error to try to get to land. If there is a strong "outsetting" tide, and you are swimming either by yourself or having hold of a person who can not swim, then get on your back and float till help comes. Many a man exhausts himself by stemming the billows for the shore on a back-going tide, and sinks in the effort, when, if he had floated, a boat or other aid might have been obtained.

9. These instructions apply alike to all circumstances, whether as regards the roughest sea or smooth water.

Treatment of Frostbites.

1. Do not bring the patient to the fire, nor bathe the parts in warm water.
2. If snow is on the ground or accessible, take a woollen cloth in the hand, place a handful of snow upon it, and gently rub the frozen part until the natural color is restored. In case snow is not at hand, bathe the part gently with a woollen cloth in the coldest fresh water obtainable—ice water if practicable.
3. In case the frostbite is old, and the skin has turned black or begun to scale off, do not attempt to restore its vitality by friction, but get the advice of a physician, meanwhile wrapping in flannel.
4. In the case of a person apparently dead from exposure to cold, friction should be applied to the body and the lower extremities, and artificial respiration practised as in cases of the apparently drowned. Even if no signs of life appear, friction should be kept up for a long period, as instances are on record of recovery after several hours of suspended animation.

Sunstroke.

The attacks which are popularly known as sunstroke, or heat stroke, are divided into two different classes. One is sunstroke proper, and the other is heat exhaustion. The symptoms and conditions are so different that they require two very different lines of treatment; but, whichever is present, prompt and intelligent action is required.

In Sunstroke proper, or heat fever, the skin is hot and dry. The chief danger is in the excessive temperature. Get the patient into the shade as speedily as possible; place him with head and shoulders elevated; loosen collar, necktie and all tight clothing. The next thing to do is to lower the body temperature as quickly as possible. Pour cold water over the head and face, and if very hot rub the body with pieces of ice. If the patient is able to swallow give cool drinks of water. Do not give alcoholic stimulants.

In Heat Exhaustion the conditions as regards temperature are just the opposite to those in sunstroke. The person is pale and faint, and the temperature is usually below normal. Remove to nearest shade. Place on the back with his head on a level with the body. Loosen tight clothing. Rub the hands and feet until the circulation is restored. Hot baths with a temperature of 110 may be used if available, or hot bricks or other methods of restoring the temperature of the body to the normal should be resorted to. Give hot drinks or hot tea, coffee or milk or water.

When hot weather comes on persons whose occupations expose them to great heat, whether artificial or that of the direct rays of the sun, such as bakers, laundrymen, workers in foundries and housekeepers working in heated kitchens, should avoid excesses of all kinds. They should dress lightly, not overload the stomach, especially with solid food, and should not over-work. An abundance of cool water so as to encourage perspiration should be used, but the use of iced water is not advisable. Free perspiration is a safeguard against sunstroke, but the moment perspiration ceases and the person begins to feel uneasy, with a slight or throbbing headache, dizziness, etc., work should be given up at once and rest in a cool place should be sought. In an hour or so the person thus affected may cautiously resume work. The use of alcoholic drinks predisposes to sunstroke.

Get and keep a full set of these leaflets.

Keep on hand a full set of these leaflets.

Health of Home and School.

LEAFLET NO. 15.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

The Cigarette and the Boy.

These two should never go together. In many countries and in many states there are laws which provide severe penalties by fine or imprisonment, or both fine and imprisonment for persons who sell or give away, cigarettes to boys. Maine has such a law. It is a good reasonable law. Why every right-thinking man or boy should wish to have this law strictly enforced, and should be willing to use his influence to have it enforced may be learned by reading this leaflet.

About Boys.

Our boys are the men of the years to come, growing up to take their places as good, patriotic, useful citizens of our state. While growing up they need pure air, pure water, simple food, plenty of sleep, and exercise got in play and work. The body of the growing boy is the most wonderful machine in the world. While working it all the time the boy is building it up so that it is becoming stronger, more effective, and more-nearly perfect every year, or it should be so. Nothing should be allowed to hinder the building up of this machine or to mar its workings. Insufficient or unsuitable food will do it. So will various wrong habits, and so will bad air and various kinds of poisons. Among the vilest, the most treacherous of the poisons for the boy is that of tobacco.

The Tobacco Poison.

And is tobacco really and truly a poison? Some of the surest "kills" for parasitic life on plants and for the vermin on domestic pets, poultry and live stock are made from tobacco. But in applying tobacco tea or other tobacco products, caution is required else the pet animal may be killed together with the "bugs" which plague him. The tobacco poison is hostile to all forms of animal life, the highest as well as the lower. Taken in excessive quantities tobacco produces delirium, blindness, trembling, complete prostration, cold clammy sweats, convulsions, paralysis, and death.

In the smaller doses of the poison which are taken in while smoking, the effect is, of course, less noticeable, but the boy or youth who uses tobacco is almost certainly dwarfing body and mind. After the age and full development of manhood, many men use tobacco without apparent harm, while the effects in other men are serious disturbances of the action of the heart and of the stomach, dimness of vision and serious changes in the arteries. In the University of Michigan it was shown that the use of even moderate amounts of tobacco by smoking lowers the working power of the human muscle in a high degree. Aside from lowering the power of muscular contraction, tobacco interferes with the fine control of the nervous system over muscular action. On account of the damaging influence on muscles and nerves, young men in the colleges who use tobacco are, as a rule, absolutely excluded as unfit when making up teams for athletic contests.

Though many men may not be appreciably affected by the use of tobacco, the results of cigarette or other forms of tobacco smoking are disastrous on boys. This has been proved again and again.

Many young men competing for a West Point cadetship, and still larger numbers wishing to enlist in the army, have been rejected on account of "tobacco heart."

Dr. J. W. Seaver, College Physician of Yale University, in his examinations and measurements of the students upon entering the university and their development while there, found that the non-users of

tobacco increased 13.4 per cent. more than the regular users and 6.6 per cent. more than the occasional users. In the growth in height those who did not use tobacco increased 24 per cent. more than the regular users and 14 per cent. more than the occasional users. In the growth of chest girth those who did not use tobacco had an advantage over the regular users of 26.7 per cent., and over the occasional users of 22 per cent. In capacity of lungs and lung power the growth is in favor of the non-users by as much as 77.5 per cent. when compared with the regular users and 49.5 per cent. when compared with the irregular users. Dr. Seaver says that while it has long been recognized by the ablest medical authorities that the use of tobacco is injurious to the lungs, the extent of its influence in checking the growth in this and in other directions has, he believes, been widely underestimated.

Investigations similar to those of Dr. Seaver's were made by Prof. Hitchcock of Amherst College, and with practically the same results. He found that the development of the tobacco users was seriously retarded. In Bowdoin College too, Dr. Whittier has observed bad effects among tobacco-using students.

Effect Upon Intellect and the Moral Nature.

As long ago as 1855, Bertillon of France, in investigating the action of tobacco upon the boys in the Polytechnic School of Paris, found that the users of tobacco averaged lower in rank at their examinations than did the boys who did not use tobacco. He also found that the average rank of the smoker as compared with the non-smoker became lower and lower from the time of entering the school until the time of leaving it, provided the smoking continued.

Dr. Stuver as president of the Wyoming Scientific College, made a study of the effect of tobacco on boys. He says that it "has a peculiarly demoralizing effect on the moral nature of the young. In addition to making boys tired, stupid and lazy, it makes them irritable, perverse and careless of the rights and feelings of others. I have seen quite a large number of so-called 'fiends' and have yet to find the first one on whose word I could rely in a business transaction. There may be honest ones, but if so, I have never met them."

Cigarette Boys Not Wanted.

Many others besides Dr. Stuver have come to consider as untrustworthy the boys who use cigarettes. Many business firms now make it a rule not to employ them. In some of the cities there are associations of business men pledged not to employ any cigarette smoking boys on the ground that the average cigarette boy is not worth hiring.

A Word to the Boy.

To the boy who is thinking of using cigarettes or tobacco in any form, the very best advice is, don't! It will have too bad an effect. It will stunt your body and mind and put you in a condition so that you will not be respected and trusted and wanted as you will be if you let the cigarettes alone.

Boy Scouts and Cigarettes.

Certainly, you will want to become a Boy Scout; then let the cigarettes alone, so that they will want you and can trust and respect you. The fun and success of being a Boy Scout comes from having every sense well trained and alert, and every nerve and muscle under the finest control. But the cigarette or tobacco comes in here as a spoiler. The cigarette boy is not so sharp, so alert, and so much a master of himself as are other boys. Yes, let the cigarettes alone so that you may be a worthy recruit to the ranks of the Boy Scouts and not a cigarette runt and underling. Don't let the cigarette be a confession that you are a degenerate.

Keep on hand a full set of the leaflets.

Health of Home and School

LEAFLET NO. 17.

Issued by the State Department of Health of Maine.

Water for the Home and Farm.

The diseases which are spread by water supplies which are not good and pure are so frequent and serious that everybody should have correct information about these matters. It is hoped that this leaflet may give such information in a useful way.

Dangers from Impure Water.

This can best be shown by a few examples: In the spring of 1885, a man had typhoid fever in a house not far from the stream which supplied Plymouth, Pa., with its drinking water. The discharges from this one man while ill were washed into the stream, and although there were four reservoirs or ponds made by damming the river between this house and the place where the public water supply was taken out, there was a sudden outbreak in the city—1,104 cases with 114 typhoid deaths.

The city of Hamburg, Germany, in 1892, was taking its water from the river Elbe without purifying it by filtering or otherwise. Altona, joined right on to Hamburg, and really a part of it, had the same river water, but it was filtered. In that year Hamburg had a bad outbreak of Asiatic cholera. There were 18,000 cases and over 8,000 deaths. In Altona the death-rate per 100,000 of population was less than one-sixth as great as it was in Hamburg and many of these cases were among the people who worked in Hamburg and drank the bad water supplied in that city.

Taught by this terrible lesson Hamburg began to filter its water in May, 1893. Typhoid fever, before that, had been a severe plague to Hamburg. For instance, in the four years, 1885-1888, there were 15,804 cases. After the filtration of the water was begun the death-rate from typhoid fever dropped to but a little more than one-sixth of what it was before.

In Millinocket, in our own state, in the spring of 1904, a fire broke out. To fight the fire, water was pumped from the stream below the village sewer directly into the pipes which supplied the hydrants with water, and at the same time supplied the people with drinking water. By thus filling the water pipes with impure water a severe outbreak of typhoid fever was caused in Millinocket. But this was not all of it. Millinocket stream flows into the West Branch of the Penobscot. Bangor and Old Town, taking their supplies from the Penobscot River about seventy-five miles below Millinocket, both soon had very severe epidemics of typhoid fever by using the river water which had been polluted by the sewage from Millinocket and the infection from the cases of typhoid fever in that village.

Many other outbreaks of typhoid fever in Maine, great and small, might be cited to show how much trouble, cost and sorrow, people bring upon themselves by drinking impure water.

What Diseases are Caused by Impure Water.

The most frequent and severe diseases caused by impure drinking water are typhoid fever and cholera, but serious attacks of diarrheal diseases are spread in the same way, and water flowing through lead pipe very often causes serious and long-lasting illness among people who use the water, without their suspecting that the trouble is lead poisoning.

The Difference Between Polluted Water and Infected Water.

A well, as too many wells are, is too near the outhouse of a farm home. The filth drains or soaks into the well. The water of this well is polluted water. But, it may happen that none of the people using the

water for many years have typhoid fever or any disease that could be referred to the water.

But there comes to this home a person who is an "infection carrier." (See Leaflet No. 12, "Infection Carriers.") Then typhoid fever breaks out, and there are deaths, and there is life-long sorrow. That is because the polluted water has become infected.

Did you ever hear of anybody who had his well-water analyzed and it was found to be badly polluted and then the owner laughs at the idea, because he had drunk the water a dozen years or more and had not been hurt by it, as he thought?

And did you ever hear the story of Damocles over whose head a sword was suspended, hanging by a slender thread? Those who use polluted water are always in danger as was Damocles. The sword may fail any time. Polluted waters are those which are the most likely to become infected waters. A degree of prudence which common sense would dictate should keep us from using polluted waters.

How Wells and Springs are Polluted.

Pollution almost always comes about by carelessness in having wells too near the sources of filth,—outhouses, barn yards, drains, sewers, etc., or by carelessness in constructing them, or in not taking proper care of them afterwards.

In too many wells the stoning is not carried high enough to allow the surrounding ground to be graded off so the surface wash may be drained from the well. It runs directly in without filtering through the soil. Aside from properly grading off the surface surrounding the well, a good layer of puddled clay beneath the surface and sloping from the well, and extending a considerable distance from it, would give a good degree of additional security.

One Great Protection.

With ordinary soils it is a great protection against the pollution of wells if any surface soakage which finds its way into them has to travel a considerable distance through the soil to get there. It is because the soil can act, in some degree, as a filter. And there are other reasons.

But in some places the layers below the earth's surface do not afford protection. Gravel affords little or none. Sand is the best, and ordinary sandy or light loam the next best. A shallow soil and a waterproof layer of clay or ledge near the surface may carry foul soakage quite long distances into wells.

Drilled Wells.

Ledges often have seams or crevasses through which polluted drainage in its worst form may reach drilled wells, even if they are carefully cemented at the top. Even if you have wells thus carefully constructed, it is risky to allow the ground near the well to become filthy or to remain so.

Do Wells Require Ventilation?

It is a popular fallacy that wells need ventilation—that the water should be exposed to the air. In thus exposing it an abundant way is furnished for the admission of dust, dirt, worms, toads and other animals to die and to pollute the water. Pure water in the ground does not need the action of air.

Another Error.

Many people suppose that if water is clear and looks all right and tastes all right, it is all right. But some clear and sparkling waters, with no suspicious tastes, are dangerously polluted and infected.

Springs.

The same conditions which endanger wells may lead to the pollution of springs. They should have the same care as wells require. In their natural condition (unpolluted) the springs and wells of nearly all parts of Maine furnish good and pure drinking water.

The Golden Rule.

Truly the Golden Rule as applied to wells and springs is to keep the ground around them clean.

Health of Home and School

LEAFLET NO. 18.

Issued by the State Department of Health of Maine.

Vital Statistics; Uses and Value.

The boy was born fifteen years ago or more. His parents thought they named him James Nelson and they call him Jimmie. But his name in the records of the town clerk is Joseph Nelson. Now the question is, has Jim or Joe a legal name? If he has what is it? And who is he? And how can he in the future identify himself? His parents came from Canada, but Jimmie was born in Maine, and on that point the record is correct. But the official record says that the birth occurred seventeen years ago. Nevertheless he is considerably under that age. Now such a mixup in the record may be bad for the boy. There are quite a number of unpleasant things which may happen to the boy later in life because of these blunders in the record.

Some Things Which May Happen.

Some things in the future which may trouble this boy and result in expense or loss may be gathered from the following statements of troubles which have actually befallen other persons because a correct record of a birth or a marriage or a death had not been made.

A young man was lately a candidate for office in Maine. His parents came from Canada. He was born in Maine, but his birth was not recorded. His political opponents claimed that he was not a citizen of Maine and thus made trouble for him.

A young man from Maine was a candidate for appointment on the police force of Boston, but his birth had not been recorded. Trouble again.

Another young man from Maine in the employ of the mechanical department of one of the railway companies of Massachusetts was caused much trouble because he could not get proof of the time and place of his birth which he was required to furnish. His parents had failed in their duty to their child in that no record of his birth had been made.

Another man from Maine had received an appointment to a government position and was distressed because he was required to furnish proof of age and nativity. No record of his birth had been made.

A seventeen year old boy, born in Kansas, went on a visit to the earlier home of his parents in the old country. Returning he was held up as an immigrant at the port of New York and deportation to Europe was threatened. He was held in New York until, after much trouble, the midwife who attended at his birth was found and a record of his birth was made by his city clerk seventeen years after the date of his birth.

An American couple wished to be married in Germany. The marriage could not take place there because no public record of their births was available.

A senator of the legislature of Maine said it cost one of his elients \$50 to get proof of his marriage because no record of the marriage had been made.

A young man and his wife came from Switzerland and settled in this country. The father was killed by accident. The mother struggled on, making for herself and child a scant living, with wash-tub and needle. Word came that the child's uncle in Switzerland had died, leaving \$12,000 to the issue of his brother. But parents and physicians were both guilty of neglect in not having a record of the birth of this child made. The physician was dead. The certificate of birth could not be produced and the refusal of the Swiss government to turn over the money was a cruel disappointment to the deserving and needy mother and child.

As this leaflet is in preparation a clerk of a Maine town writes that he is called upon to furnish a birth record of a lady 70 years old, born in his town, but now living in England. She needs a record of her birth to enable her to get an old age pension, but no record can be found.

Other Uses of Vital Statistics.

Official records of births, marriages and deaths are often required to determine the right to attend school, to enter certain occupations or to be exempt from certain occupations as under the child labor laws, to vote, to marry, to hold or dispose of property, to employment in military or civil service, responsibility for crime or misdemeanor, exemption from jury or military duty, qualifications or disqualifications for certain public offices, to dispose of claims for insurance by proper evidence of the fact and the cause of death, for the purpose of settling pension claims. The pension officers are continually calling for proofs of births, marriages, or deaths, and deserving claimants cannot furnish required evidence because proper records were not made.

These are some of the reasons why it is important that there should be an accurate record of every birth, marriage and death. There are, however, other reasons: as an aid in tracing the cause of sickness and of death and the prevention of disease; for the educational value of vital statistics, and, from the genealogical point of view for their aid in writing the histories of families and of nations.

Advice to Parents.

There are two reasons why parents should be sure that accurate records are made of every birth, marriage and death which occurs in their families. The first is that it is in the interest of the family to do so, and the other reason is that every good citizen should wish to comply with the requirements of the law. Even if the physician says that he will report the birth to the clerk of the town or city, be sure that he has done so, and be sure also that the record has been made correctly, and then be sure after the child is named that the name is correctly recorded. Look up the record and if an error is found have the town clerk make the correction as is provided in the law of 1913. It will cost nothing to have it done and may save much trouble for you or yours.

The duty is upon parents as well as upon physicians to report births to the town clerk within six days, and the law does not release the parent from this duty until the names of the children have been reported to the clerk. (Blanks for reports of births or deaths may be had from town clerks or by addressing: State Registrar, Augusta, Maine.)

Intentions of marriage must be recorded by the town clerk five days before the certificate of marriage is granted. Intentions of marriage must be recorded in both towns when the parties to the proposed marriage have a legal residence in different towns.

In the case of deaths the undertaker, householder, neighbor or other person removing a body or supervising the burial shall furnish the town clerk with a certificate giving the facts called for in the blank certificate of death, including the certificate of the physician as to the cause of death, and it is the duty of the physician promptly to make out the certificate of the cause of death and have it ready, and not wait to be asked for it.

On the presentation of this certificate of death a "burial permit" will be issued by the town clerk.

This burial permit must be returned to the town clerk of the town in which the death occurred within six days after burial.

The law makes it the duty of town clerks and of the State Registrar to enforce this law relating to the registration of births, marriages and deaths.

The penalty for wilful neglect or refusal to perform any duty imposed by this law is a fine of not more than one hundred dollars for each offence.

Health of Home and School.

LEAFLET NO. 19.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

The Danger From Lead Water Pipe.

The work in the Laboratory of Hygiene in finding dangerous quantities of lead in samples of water from homes in which the family physician has found symptoms which have made him suspicious of lead poisoning has strongly emphasized the danger from lead poisoning in families using water which flows or is pumped through lead pipe.

In the histories of chronic lead poisoning from this source in this State and elsewhere two notable observations are often made:

One is that a given water may for years be conducted through lead pipe meanwhile dissolving only very slight traces of lead and then, for some cause or other, becoming loaded with dangerous quantities of lead.

The other is that among the several members of a family all using the same lead-polluted water, one person only or only a part of the members become affected so as to present marked or serious symptoms. It would appear that different individuals have very varying degrees of susceptibility to the action of lead.

Symptoms.

The symptoms which result from the long-continued taking of small quantities of lead may be very obscure, simulating those due to many other causes and raising no suspicion of lead poisoning.

Serious conditions of ill health may develop without colic and some other symptoms which are commonly looked for as typical of lead poisoning. The lead-line on the gums is not invariably present. The symptoms usually are a combination of some of the following:

Pallor of the face with, in some cases, a grayish-yellow hue, emaciation, weakness, shortness of breath, and the appearance of premature senility.

Indigestion, loss of appetite, the abdomen not usually bloated; continuous and often very obstinate constipation, though diarrhoea is sometimes a prominent symptom; even when no colic appears the pain in the gastric region and abdomen is sometimes so continuous as to suggest malignant disease. The lead-line and severe constipation are pretty sure to be well marked in cases in which lead colic has supervened.

Often an increased tension of the pulse, and frequently some of the other pathologic conditions are present which go to make up a serious disease of the arteries, which ends the life of many persons past middle age. Some of the symptoms present are disturbance of the heart's action and shortness of breath.

Disturbance of the renal function, often quite marked. Muscular pains and pain and swelling of the joints, which are usually thought by the patient to be rheumatic. In some cases gout is closely simulated. The pain is usually worse at night.

Headaches, neuralgia and sometimes neuritis, weakening or paralysis of muscular action, interfering with walking or the free use of the hands; muscular tremor; neurasthenia; cerebral symptoms and convulsions in children.

In some cases there has been a very marked improvement in the health when the patient has discontinued the use of water which has been shown to contain lead. In other cases in which the diseased conditions have gone far or have existed long, recovery is slow or only partial.

Histories of Cases.

The following condensed histories of cases of poisoning from water with traces of lead in it will help to illustrate the characteristics of the symptoms.

Case 1. A man only 38 or 39 years of age, yet he presented marked symptoms of premature aging. Could not sleep in bed; had to sit up nights. He had laryngitis and lost his voice. Lead poisoning was suspected. The sample sent to the Laboratory was found to contain lead. After getting the water supply from another source, he improved greatly in every way.

Case 2. Mrs.....had been troubled with numbness of the arms for a long while especially at night. Since the water supply was found to contain lead and the water supply was changed the numbness of the arms has entirely disappeared and the general health of the family has improved.

Case 3. A man 54 years old. Chief symptoms were colic, constipation, weakness of all the muscles, lost 10 pounds in weight, some tremor and numbness of the hands. Marked improvement after discontinuing the use of the lead-polluted water.

Case 4. A young woman. She was very pale, somewhat emaciated and quite weak. Severe lead colic with blue line on the gums. Vomited considerably and was constipated. There was marked improvement after abandoning the lead polluted water supply.

Case 5. Home bought eight years ago. The water supply was pumped through 64 feet of lead pipe. The mother had a severe attack of neuritis and was weak. The two boys had frequent attacks of stomach-ache, as they called it. The lead pipe was finally removed and an iron pipe substituted. Since then, the attacks of lead colic, as it appears to have been, are becoming very rare.

Case 6. In a general way, one Maine physician relates as follows his observations of cases which seem to be due to lead poisoning. All or nearly all had more or less nervous symptoms, some in one way and some in another. Nearly all complained of heart, short of breath, etc., though I could find no organic trouble. All had a good deal of trouble with the stomach; most of them had no desire for food though one or two wanted to eat all the time but lost strength and felt sick; constipation the rule, though diarrhoea in one or two cases; more or less vague pains in the muscles resembling rheumatism, muscles stiff and sore.

Case 7. A physician writes that in one family without doubt the father has lead poisoning. He has the blue line on his gums, constipation, etc., but the most important symptom is nervousness which at times almost amounts to insanity. He also has much pain in the joints and has taken rheumatic medicine without getting relief. Other members of the family are well although they have all drunk the lead-polluted water.

Amount of Lead Surface.

In some instances serious lead poisoning has developed when the piece of pipe through which the water came was very short. In one severe experience with lead poisoning, the trouble came from an old lead clock-weight which was found in the bottom of the well. On the other hand, water sometimes comes through many feet of lead pipe without producing symptoms. There is less danger, though not always an absence of harm, when the water is constantly flowing through the pipe.

Lead Poisoning Among Animals.

In one instance where the human dwellers on the premises suffered from lead poisoning, three head of stock were lost in one winter, and at another home where there were cases of lead poisoning, the water killed the chickens, so the doctor thinks. In another Maine home where lead pipe was the cause of poisoning to the members of the family, a valuable driving horse developed weakness of the hind legs and of his back, "went all to pieces," as the owner expressed it, and had to be killed. These fatalities among animals are merely suggestive; but other observations on the effects of lead-polluted water seem to indicate that an unthrifty condition and colic **may** be the result of watering animals with such water.

Health of Home and School.

LEAFLET NO. 20.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

The Surest Way to Spread Infection.

While we have for ages been impressed with the danger of the spread of disease through the air and by means of clothing, bedding, and rooms which have presumably been surcharged with infection, we have of late been emphasizing strongly another way in which the infection of certain diseases is spread with the utmost certainty—by direct infection, "contact infection," it is often called. For example, we may go into the room where there is a case of typhoid fever or of diphtheria, and by observing proper precautions there will be but little danger of taking the disease or of carrying it to others; but in attending to the wants of the patient our hands become contaminated by contact with him or his clothing or bedding or other things which have been soiled by him—then, if without washing or disinfecting our hands very thoroughly we put our fingers to our lips or nose or handle food which is going to our mouths, there is serious danger of taking the disease. If we infect our hands by actual contact with infectious persons or things, or if we carelessly sit upon the infected bed of the sick person, the hands or clothing will be much more likely to carry infection than they would with the much slighter chance of having infection carried to them by the air.

Contact Infection.

What has already been said explains what is meant by contact infection. It only remains to emphasize the large part it has in spreading infectious diseases. In some hospitals, particularly in some of those in Paris, they have been caring for cases of typhoid fever, scarlet fever, diphtheria, measles and even smallpox, all right in the same room together. They have even been taking care of persons with diphtheria, scarlet fever, or other infectious diseases in the rooms of the general hospitals where persons are sick with troubles other than the infectious diseases. And this has been done with a remarkably few transmissions of infections to other patients. These infectious persons have been separated from the other patients by light partitions extending upward only a few feet from the floor or by screens or by partitions of wire netting letting the air circulate freely through, or by only a tape extending around the few feet of floor space belonging to each infectious person—these enclosures only to remind the nurse constantly that she is dealing with infection and that she must always be exact in her obedience to certain rules. And what are those rules? Simply that she shall be scrupulously careful all the time to avoid the infection of her clothing by contact with infected things and that, before leaving the enclosed space, her hands must be washed and disinfected with solutions which are known to be trustworthy. Though we may not be ready to follow the French doctors in their methods, the results in those hospitals and in a few others outside of France have certainly shown how much may be accomplished in preventing the spread of infection by strict precautions against contact infection.

The Mouth, An Open Portal.

Infection may be received into the system by breathing it in or by having it inoculated through the skin by cuts, punctures, or the bites of insects; but the mouth is the principal port of entry for those undesirable immigrants, the disease germs of many of our infectious diseases. We can mention only a few of those infections.

Typhoid Fever.

The large outbreaks of typhoid fever are almost always due to infected water and infected milk, but following the primary cases in the outbreaks there is great danger of other cases in the same families coming down as the result of contact infection. One boy in a family of eleven came down sick with typhoid fever. Eight others in this family took the disease from him. In another family one of the boys brought home typhoid fever. The mother, a very untidy woman, with unwashed hands, went from her care of the sick boy to her preparation of the meals for the family. The other two boys came down with a very malignant form of the disease, due undoubtedly to the massive doses of infection the unwashed hands of the mother had conveyed. Nurses even in hospitals where they are supposed to be well trained and thoughtful sometimes take typhoid fever from their patients because they do not keep their fingers away from their mouths.

Tuberculosis.

A young man in Maine died with tuberculosis. The cornet which he had played came into the possession of another young man. He died of tuberculosis. A third young man then had the instrument. He also caught the disease from the cornet and died. A teacher in a high school, an estimable lady who had tuberculosis, was in the habit of greeting her young lady pupils with a kiss. Four of these young ladies in four different families died with tuberculosis within a few years. Many other histories show with what certainty tuberculosis can be carried by things which pass from lip to lip, or are used in common by tuberculous patients and other persons—spoons, forks, common drinking cups, pipes, pencils, etc.

Scarlet Fever.

Scarlet fever may be carried in the air short distances indoors but there is a greater degree of certainty of its transmission by coming in contact with the sick person—by infecting the fingers, transferring the infection to the mouth or nose, etc. Letters written in the scarlet fever sick-room have been known to carry the disease to the children in families to which such letters were sent many miles away. It is likely that such letters received their infection from the infected hands which wrote them rather than from infected air. The scales which fall from the skin of persons during the process of peeling (desquamation) are likely to have due consideration, but the public underestimates the infectious character of the secretions from the throat, mouth and nose or the discharge from the ear which may be a sequel of the attack of scarlet fever. These are sources of the infection which may spread the disease by direct or indirect contact infection.

Diphtheria.

In this disease there is great danger of the transmission of infection direct from the sick to other persons or by indirect contact infection when spoons, handkerchiefs or other things from the sick-room are not properly sterilized before other persons use them. In numerous instances the heroic devotion of physicians to their sense of duty has caused their death from diphtheria after applying their lips to the tracheotomy tube which has become obstructed by the infectious membranes from the windpipe and must be removed instantly to save the life of the sick child. Infection thus received is in massive doses, and the malignancy of infectious diseases seems to depend largely upon the size of the dose of infection received.

The final word is that the infection of many diseases is spread with the utmost degree of certainty by persons and things which have been in actual contact with the sick persons. It cannot be emphasized too strongly that such persons and things, before they leave or are carried from the sick-room, and before they are used by other persons or come in touch with them, should be sterilized (disinfected) in no uncertain way. And beware of infected fingers.

Health of Home and School.

LEAFLET NO. 21.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Accidents and Emergencies of Childhood.

The purpose of this leaflet is to teach what to do when some accidents and emergencies occur among children. By knowing how to do the right thing promptly, much suffering may be prevented and sometimes life may be saved.

Things accidentally swallowed.

If still in the throat, or you are not sure where it is, quickly explore with the finger and remove any foreign body found there. Articles accidentally swallowed, if they have passed through the gullet, are small enough to go the rest of the way without trouble. If the swallowed article has sharp points or a cutting edge, cathartics should not be given, as the loaded condition of the bowels affords protection to the intestinal walls by coating the article. Sometimes it is advisable to give bulky articles of food like potatoes or other vegetables which leave considerable waste matter in the intestinal canal. If there are no witnesses to the act of swallowing, search in the cradle and elsewhere for the missing things.

Foreign bodies in the windpipe.

If articles have been drawn down into the windpipe, violent coughing suddenly occurs. The foreign body may be expelled by the coughing or fatal suffocation may occur. The doctor should be summoned quickly. In some of these cases, life can be saved only by prompt operation.

Meanwhile a slap on the back between the shoulders with the open hand sometimes aids in the expulsion of the object. If that does not suffice, suddenly reverse the child holding him by the feet suspended while he receives a slap between the shoulders. But if not successful, do not persist. The doctor is what is needed. Occasionally small articles settle down into one of the smaller of the bronchial tubes and considerable irritation or even a local abscess or long lasting illness may result.

Foreign bodies in the nose.

If foreign bodies in the nose cannot be removed by blowing the nose, the expedient of putting a pinch of snuff into the unobstructed nostril, that sneezing may be excited, may be tried. It is inexpedient to resort to unskilful manipulations. The result is usually the pushing of the article farther up into the nose. Better leave it for the doctor to remove. Dried peas or beans which children sometimes push into their noses should be removed as soon as they can be, else their swelling may cause a serious condition and make the removal much more difficult.

Foreign bodies in the ear.

It is more difficult to remove foreign bodies from the ear. If not removed, they may excite an inflammation that may extend to the base of the brain, and unskilled attempts at removal are still more dangerous for the reason that the foreign body is pushed down against the drum of the ear and may even rupture the drum membrane which is only three-fourths of an inch from the surface. If the doctor is not available, the safest way to try to remove the object is by syringing with blood-warm water.

Insects may be drowned or floated from the ear by filling the passage of the ear with warmed olive oil or water.

Foreign bodies in the eye.

Most of the small substances which find their way into the eye may easily be removed. Occasionally a metallic particle or cinder is driven into the membrane which covers the globe of the eye so that it adheres somewhat tenaciously. The child should be restrained from rubbing the eye. Sometimes the particle can be removed by catching the upper lid by the lashes and pulling it away from the eyeball and down over the lower lid, then letting it go so that as it recedes, the under surface of the upper lid is swept by the lashes of the lower lid.

If this does not suffice, the upper lid should be turned upward and backward, that is, inside out, so that it may be seen whether the particle adheres to the under surface of the lid or is attached to the globe of the eye. The upper lid may be everted by seizing the lashes between the thumb and first finger and drawing the edge of the lid away from the eyeball while at the same moment a slender pencil or knitting needle or something of the kind may be placed against the eyelid parallel to the edge of the lid, a third or half an inch above the edge, and then pulling the edge of the lid upward and turning it over by means of the lashes. With a little experience in doing this, it can easily be done, thus exposing a large part of the eyeball and the inner surface of the lid. Any foreign particle found may be removed by brushing it off with the corner of a handkerchief or with the eye-end of the a long darning needle.

Particles of quicklime, or lime during the process of slaking, thrown or spattered into the eye, forms a serious emergency. The quicklime rapidly burns the surface of the globe of the eye and its covering lids resulting in very serious injury unless very quickly removed or neutralized. The eye should be quickly flooded with water and still better neutralized with a few drops of vinegar added to the water. This should be followed by instilling a few drops of olive oil into the eye at short intervals.

Falls.

The great elasticity of the bones of the infant often saves it from serious injuries which would result to older persons. If, in falling, the child strikes upon its head, or if he receives a blow upon the head, it must not too speedily be concluded that no injury has resulted, for serious symptoms may result and they may not develop until some time afterwards. It is better in cases of injuries to the head, to keep the child as quiet as possible for several days thereafter.

Convulsions.

Until the doctor comes, keep the child very quiet and apply ice to the head or sponge the head with cold water. Then roll the body in towels that have been wrung from warm mustard water. Apply the same to the feet and legs. But be careful to keep the mustard from the baby's eyes and remember that the baby's skin is very tender and that particles of mustard floating in the water may easily blister the skin. So, for each quart of water to be used, put one heaping tablespoonful of mustard into a little square of muslin or a thin clean rag, tie it up, and pour the water upon it. Then stir the bag around in the water.

Have ready an abundant supply of hot water and a bath tub so the doctor may give a hot bath if he deems it best to do so. In the excitement, there is danger of having the bath too hot. Its temperature should not be more than 105° F., and if a thermometer is not at hand, the water should be tested by plunging the arm to the elbow into it and letting it remain until assured that the water is not uncomfortably warm. In ten minutes remove the child from the bath, and without drying, wrap quickly in a warm blanket.

In applying the mustard water or the hot bath, be careful not to chill the skin in the least or for a moment.

Have you a full set of these leaflets in your home? If not, get them and keep them.

Health of Home and School.

LEAFLET NO. 23.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Typhoid fever, how not to have it.

Every year we pay a heavy penalty for our old fashioned notions and our carelessness about typhoid fever. Typhoid fever is an infectious disease, but it can be prevented and should be prevented.

How shall we do it?

We must understand clearly (1st) that the cause of typhoid fever is a microscopic plant growth. It is called the bacillus of typhoid fever. This bacillus is the infection of the disease. The only sources of it are the living bodies of persons who have typhoid fever or have had it. There is just one other source: infection carriers. Read Leaflet No. 12 to understand what that means.

(2nd) Typhoid fever can be spread only by the carrying into the mouths and intestinal tracts of other persons particles from the infectious discharges of persons who have typhoid. The ways in which this may be done are:

(a) By his infected fingers a person may carry the infection directly to his own mouth and lips, or he may, with his hands which have been unwashed and undisinfected, contaminate his own food or that of others, thus spreading infection. Food may be infected by the fingers of persons with typhoid fever, or by the fingers of attendants upon the sick.

(b) Cups or spoons or other eating utensils used by the sick may serve as the agents of transmission.

(c) Flies which go to the sickroom, or to infected privy vaults, or to other sources of infection may then infect milk, bread or other supplies.

(d) Sudden and severe outbreaks of typhoid fever are sometimes due to milk which has been infected while milking or during the subsequent handling or distribution of it.

(e) Wells, springs, cisterns and public or other water supplies may serve as a medium of infection after they, directly or indirectly, have received infected matter from typhoid discharges.

Personal rules and precautions.

1. The carrying of infection by infected fingers is one of the greatest of the dangers. While in the sickroom of the typhoid fever patient, the attendant must be unceasingly thoughtful and careful. The fingers of the nurse must be kept from her mouth and lips. Typhoid fever can be introduced into the system only through the mouth. This must be remembered always. After touching or handling any infected articles, and after coming from rooms or other places where infection may exist, the hands should be washed very carefully with soap and water and disinfected if it is convenient to do so.

2. Persons in typhoid fever houses should wash their hands frequently, being very careful to do so every time after leaving the toilet room and every time just before eating.

3. Guard carefully against infecting drinking water, milk or other foods with unwashed hands. The mother or nurse who attends to the wants of the typhoid fever patient and then prepares the family meal without carefully washing her hands endangers the other members of the family very much.

4. In a typhoid house, do not eat anything in the sickroom or anything which has been in the sickroom. Avoid cold and raw foods as much as possible.

5. When typhoid fever has occurred in a house, regard the water supply with suspicion. By boiling water all typhoid infection in it is destroyed. It is therefore a good rule to begin immediately the boiling of the drinking water upon the first appearance or even suspicion of a case of typhoid fever in the family.

6. Immediately after food is cooked, cover it so that flies may not carry infection to it.

7. By screening doors and windows exclude flies from all living rooms. Flies may bring infection from a distance. Kill every fly which chances to enter the room.

8. Flies should be excluded from the typhoid fever sickroom, from privy vaults and from other places where they may load themselves with infection and spread it.

9. Keep kitchen and table dishes thoroughly clean and scald them before use.

10. With the utmost care keep infectious matter far from springs, wells or other sources of water supply. Do not have washing done near any source of water supply.

Rules for the sickroom.

The aim of the sickroom management should be the prompt destruction of every vestige of infection leaving the patient in the solid or liquid discharges so that infection may not be communicated to other persons.

1. Precautionary measures should be begun as soon as any suspicious symptoms indicate the probability, or even the possibility of typhoid fever. Many persons are disseminating typhoid infection before they are sick enough to take to their beds. Get busy with the first suspicion of typhoid fever.

2. Unnecessary visitors should be excluded from the sickroom. The nurse, observing the proper precautions, will not endanger other persons.

3. By means of screened doors and windows, flies should be excluded from the sickroom.

4. In convenient proximity to the sickroom there should be a tub or other large vessel partly full of Solution 1 or 6; this for the immediate reception of soiled clothing and bedding.

5. Just inside or outside of the door there should be a wash stand and wash basin with a supply of water so that the nurse, medical attendants and others who leave the room may wash and disinfect their hands, using Solution 1, 6 or 7.

6. All discharges from the patient should be disinfected very thoroughly by adding an equal volume of Solutions 1 or 5 and letting the mixture stand at least 4 hours before it is emptied. And a surer way to disinfect the discharges is to carry them out and pour upon them in the vessel at least five or six times their volume of really boiling water. Then give the heat time to act.

7. The ultimate disposal of the discharges from the patient may be down the water closet bowl if there is good plumbing and a water carriage system, and if nobody below has a water supply to be polluted. They must not be poured into a privy or earth closet vault. They should be buried far from any well, spring or other source of water supply.

8. If floors or anything else have been contaminated the places should be thoroughly soaked with Solution 1, 6 or 7 as soon as possible, and then cleaned after the disinfectant has had a chance to act sufficiently.

9. For a month at least after leaving his bed the convalescent from typhoid fever should be very careful not to endanger other persons, because many such convalescents are still giving off infection. Safe disposal of discharges should be continued and persons recently recovered from typhoid fever should do no milking nor cooking, nor serving or handling of food.

Disinfecting solutions.

Solution 1.—Seven ounces of carbolic acid (pure liquified) to one gallon of water.

Solution 5.—“Milk of lime” recently prepared and made with good fresh lime not air slaked in the least.

Solution 6.—One dram of corrosive sublimate (or 8 tablets) dissolved in one gallon of water. Must be mixed and kept in glass, crockery, or wooden vessels. Injures and is spoiled by contact with metals. Label, *Poison!*

Solution 7.—Six ounces of the strong solution of formaldehyde (Formalin) to one gallon of water.

Health of Home and School.

LEAFLET NO. 30.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE

Cases of Poisoning and What to Do.

The proper care of medicines for internal use and of liniments and other things for external application should be the rule and the practice in every home. All of these things, as well as poisons for rats and mice and all insecticides for domestic or agricultural use, should be plainly marked and kept in safe places.

The orderly care of all things which may have poisonous effects if improperly used is not only for the prevention of accidents and the saving of life, but the fact that death from some of the poisons from which accidents the most frequently occur is accompanied by the most agonizing and sometimes prolonged pain, should doubly emphasize the need of care in storing or keeping or handling these things. They should especially be kept beyond the reach of children.

Treatment.

When poisoning has occurred send for the doctor at once and order him to come quickly and to bring what he needs in poisoning cases. If known, inform him what the nature of the poison is, otherwise there may be a regrettable delay in getting the proper antidotes or instrumental aid for the patient.

But begin work without waiting for the doctor to come, and get to work quickly. Generally the first thing to do is to give an emetic—make the stomach empty itself. Every minute counts, so use what may be had the most promptly.

If at hand, stir a tablespoonful of dry ground mustard into a quart of luke warm water.

If the mustard is not at hand, use the same quantity of common salt in a quart of warm water.

Force the patient to drink cupful after cupful of one of these mixtures; between whiles tickling the back of the throat with the finger or with a large stiff feather. Keep this up, the draughts to repletion and tickling the throat until plentiful vomiting occurs. If mustard or salt is not available, give the water without them; if warm water is not to be had right off, give cold water while water is warming. If clean water is not to be had on the instant, use water from the wash bowl or dish water or any water. The saving of life, not fastidiousness, is the order of the day. Repulsiveness may aid the emetic effect.

There are two exceptions to the general rule to give an emetic. When caustic alkalies or acid poisons have been taken do not give an emetic. Get their antidotes into the stomach as soon as possible.

The following are specific directions for the treatment of persons who have taken certain kinds of poisons or classes of poisons. For some of them the doctor will have better methods of treatment.

Acids, sulphuric, nitric, muriatic or hydrochloric, acetic (does not include carbolic acid or prussic acid).—Give an alkali in doses large enough to neutralize the acid, whichever can be obtained the most speedily—powdered chalk or magnesia in large draughts of water, or lime water, washing soda, or even soap or wood ashes. Then give milk, white of egg shaken up with water, olive oil, or thick smooth gruel. Do not give emetics.

Alkalies, potash, soda, ammonia, lye, quick lime.—Give water freely with vinegar, citric acid, or lemon or orange juice, or cider; then soothing drinks, such as white of egg and water, milk, gruel, or barley water.

Aconite or aconitine.—Emetic; hot strong coffee by mouth or enema as a stimulant; keep up the warmth of the body by warm appli-

cations, strictly maintaining the recumbent posture; artificial respiration if necessary.

Alcohol, (grain or wood).—Same treatment as for aconite. In poisoning from wood alcohol, aid its elimination by free sweating and by the administration of large quantities of water in which sodium bicarbonate has been dissolved.

Ammonia water.—See alkalies.

Arsenic and its compounds; Fowler's Solution, Paris Green, London Purple, etc.—Emetics; raw eggs beaten up with milk plentifully, or equal parts of oil (olive or linseed) and lime water, or milk with its cream, or magnesia freely.

Belladonna, or atropine.—Emetic; strong coffee or tea by mouth, or a pint as enema.

Camphor.—Same as belladonna.

Carbolic acid, phenol.—Give a tablespoonful of Epsom salts or Glauber's salts in a cupful of water, preferably warm. If either of these is not at hand use alcohol as an antidote. Apply alcohol full strength to external injuries from carbolic acid and as whiskey, gin or brandy diluted where carbolic acid has been swallowed. Use promptly and liberally whichever is available. Then white of egg in water plentifully. Do not give oils and do not try an emetic.

Chloral hydrate.—Same as aconite.

Chloroform.—Fresh air; artificial respiration.

Coal Tar Remedies for pain and fever, which are often constituents of patent medicines advertised for headache, colds, grippé, etc. (acetanilid, antifebrin, antipyrin, phenacetin). The symptoms are faintness, nausea, and perhaps vomiting and purging, pulse weak, sweating, paleness, cyanosis.—Emetic; keep patient lying down; coffee or aromatic spirits of ammonia; warmth to extremities.

Cocaine.—Emetic; strong tea or coffee; maintain respiration artificially if need be.

Copper salts, blue vitriol, etc.—Emetic; whites of eggs, half a dozen or more, strong tea or coffee.

Corrosive sublimate, bichloride tablets or other salts of mercury.—Same as copper.

Creosote.—Same as carbolic acid.

Formaldehyde.—A very weak solution of ammonia water.

Gas, illuminating gas, poisonous fumes, choke damp, gas from charcoal stoves or gas stoves, water gas, carbonic acid gas, carbonic oxide, etc.—Plenty of fresh air, open all doors and windows; artificial respiration to be kept up for a long time; hot strong coffee as enema.

Gasoline, benzine.—Same as alcohol or aconite.

Hyoscyamus and hyoscyamine.—Same as for belladonna.

Iodine, tincture of iodine.—Emetic; starch and water boiled as for starching clothing, a large quantity; white of egg freely.

Lead Poisons, sugar of lead, etc.—Emetic, large tablespoonful of Epsom salts or Glauber's salts dissolved in a cupful of water; then white of egg and water.

Mushrooms, or poison from bad meat or fish.—Emetic; ounce of castor oil, and enema if necessary to clear out the intestines; warmth to extremities.

Opium, morphine.—Emetic; strong coffee without milk by mouth or enema; rouse the patient and keep him in motion; if approaching collapse cease exercising him but begin and keep up artificial respiration. If obtainable, potassium permanganate, a quantity of about the size of one or two grains of wheat may be used several times dissolved in water.

Oxalic acid.—Chalk, lime or whiting in water given freely; even the whitewash from a wall, ceiling or fence may be used. Two tablespoonfuls of castor oil to clear the intestines, or an emetic may be given.

Phosphorous, lucifer matches.—Emetics; large tablespoonfuls of Epsom salts as a purgative. Do not give oil.

Strychnine, nux vomica.—Emetics; give powdered charcoal freely or a few drops of tincture of iodine at a time. Strong boiled tea; artificial respiration; the greatest possible quietude for the patient.

Tobacco.—Emetic; strong tea or coffee; keep up body warmth; quietude; artificial respiration if necessary.

Health of Home and School.

LEAFLET NO. 32.

Issued by the State Board of Health of Maine.

The Menace of Rats.

Plague is the most terrible of the pestilences which have afflicted man. It slays from 60 per cent to 90 per cent of those whom it attacks. In the 14th century it swept away 25,000,000 of the people of Europe. Within the last few years it has destroyed several millions of the people of India. The disease is now widely spread over the world. Just now New Orleans is waging a costly war against plague.

Plague is primarily a disease of rats, and secondarily a disease of man. From infected rats it is transmitted to human beings through the agency of fleas. Therefore, the most important work of guarding against plague, or stamping it out after it appears in a place, is the destruction of rats.

That rats bring plague and some other very serious diseases to mankind is sufficient reason why every community and every household should wage a ceaseless warfare against those rodents which are so dangerous and destructive and so filthy in their habits.

How To Catch Rats.

Dr. W. C. Rucker, Passed Assistant Surgeon of the United States Public Health Service, who was the executive officer of the work which was carried on against plague in San Francisco, a few years ago, gives the following as the methods which were employed by the rat catchers who were in the employ of that service:

It is first to be remembered that the rat is a very wise animal and that the whole operation of trapping him is a test of wits between man and the rat.

Rats are to be found where there is an abundant food-supply for them. Therefore, the best places to catch rats are slaughter houses, meat markets, chicken houses, in and around garbage cans and places where garbage is usually placed. If the rat is deprived of this food-supply he will be attracted by the bait in the trap and thus enter it.

Cage Traps.

The large nineteen-inch French wire cage trap has given very good results where rats are plentiful. It should be made of stiff, heavy wire and well reinforced, as a large, strong rat will force his head between the wires of a weak trap and thus escape. Before setting, the lever on the trap should be tested to see that it works properly. The trap should be placed on a hard surface with the rear end a little higher than the entrance so that the trap will close promptly. When setting the trap in the open it should be fastened to a board on which about an inch of soft dirt has been spread. Place the trap where the rat usually goes for food or in a run-way and disturb the surroundings as little as possible. It is sometimes well to place the trap near where there is dripping water, as the rats come there to drink. If the trap is set in hay or straw or wood, it should be covered (with the exception of the entrance) with this material. When this is not possible it should be covered with a piece of sacking or placed in a dark corner or beneath the floors. When setting the traps in the sewer, a dry place should be chosen.

The rat is more or less of an epicure; therefore, the bait should be changed at frequent intervals. Also, he should be given food which he is

not in the habit of getting, for example: In a meat market, vegetables are the best bait, while in a location where vegetables are plentiful, fresh liver and fish heads or a little grain are best. The following may be suggested as good bait to be used: Fish, fish heads, raw meat, cheese, smoked fish, fresh liver, cooked corn beef, fried bacon, pine nuts, apples, carrots and corn. When trapping in chicken yards a small chick or duckling is remarkably good. When a large number of rats are caught in one trap, search for the female and leave her alive in the trap, as she may call in the young or the males. The bait should be fastened to the inner side of the trap with a piece of fine wire, so that the first rat in cannot force the bait underneath the pan and thus prevent the entrance of other rats. A few grains of barley should be scattered near the entrance of the trap and a small piece of cheese or meat fastened to the pan with a piece of wire. It is often well to touch the pan with a feather which has been dipped in oil of anise or oil of rhodium. Before leaving the trap, it should be smoked with a piece of burning newspaper to kill the smell of the human hands or rats which have been in it. Do not handle the trap after burning it out. When trapping in a neighborhood where rats are known to exist, the traps should not be moved for three or four days unless they have rats in them, as it is well for the rats to become accustomed to seeing them and thus careless about entering. It is not wise to kill rats where they are caught, as the squealing may frighten the other rats away.

Snap Traps.

Snap or spring traps are best for use in houses and stores, with the exception of fish and meat markets. Snap traps are best for use in runways, and on beams and shelves. It is sometimes well to disguise the trap by covering its floor with a little sawdust or dirt. They should be first tested to see that they work properly and that the staples are secure. New traps should be smoked or stained to render them an inconspicuous color.

The bait should consist of some firm material such as fried bacon or tough meat and should be tied on so that the rat will be obliged to pull on it, and thus spring the trap. The trap should be placed in a corner or close to the wall on a flat, hard surface so that the rat cannot spring it with his tail or by walking on it.

Barrel Traps.

In warehouses and granaries large numbers of rats may frequently be trapped by using a barrel or garbage can having a metal top which is carefully balanced. Large pieces of strong cheese are placed in the middle of the cover and a plank laid from the floor to the edge of the barrel. The rat runs up the plank onto the smooth metallic lid, which tips, and the rat is precipitated into the barrel.

In Fig. 1 is shown a snap trap of excellent design. The spring is released either by an upward nibble, or a slight downward pressure. Fig. 2 represents a trap which need not be baited. Set in the runways of rats, it is sprung by a very slight touch.

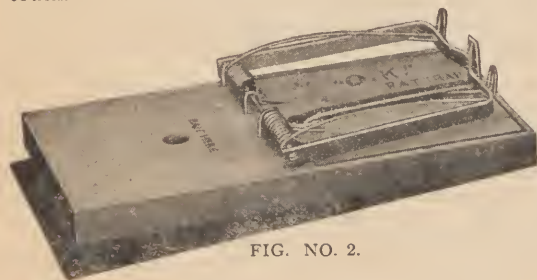


FIG. NO. 2.



FIG. NO. 1.

Health of Home and School.

LEAFLET NO. 33.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Fire Prevention.

We are told by a celebrated fire chief that fully one-half of the fires in the United States might be prevented if reasonably intelligent precautionary measures were observed. In the avoidance of destructive fires the proverbial ounce of prevention overshadows in value very much the pound of cure.

A Few Points on Building.

Have chimneys built with a view to safety even while they are burning out. The brick should be laid carefully in cement mortar instead of lime mortar. Having the flues lined with brick set on edge gives further assurance of safety, though it increases the cost of construction. Avoid the contact of woodwork with the brickwork of the chimney stacks. Fire stops on a level with each ceiling cost but little and are worth much as an item in slow burning construction.

Oils, Paints, Grease and Fats.

The cause or origin of some fires, remains a mystery. Oily rags and floor-cloths, even in the working department of the household, are a frequent source of fire by spontaneous combustion. It requires but a slight amount of heat to release from certain substances gases that will unite very readily with oxygen and produce flame. Animal and vegetable oils, such as linseed oil, used in most paints, cottonseed oil, machine oil, are household accessories particularly susceptible to any increase in temperature, and in combination with inflammable materials like cotton, will take fire of themselves. Keep oily rags and mops in closed metal receptacles.

Oils, paints, grease and fats should be stored outside the house. Under no circumstances should they be kept in the basement or cellar or close to the stairs. Burn up ham bags, butter or lard paper, greasy cloths from dishes, sewing machines, lamps or fresh paint. Do not put them with any other rubbish. The furnace is the only safe place.

Kerosene, Benzine, Gasoline and Naphtha.

If you must use benzine or gasoline, take it out of doors. Other cleansing fluids are on the market, approved as absolutely non-inflammable. Keep your benzine can labeled. Do not mistake it for kerosene. The vapor given off by benzine, naphtha, and gasoline, travels everywhere and sinks instead of rising. It seeks light or fire of itself in rooms distant from the one in which it is used. A draft is necessary to get rid of this vapor. The open window is not enough.

It seems almost an insult to an intelligent reader to give rules about kerosene lamps. Nevertheless let us comment upon the value of keeping them clean, well wiped off, and filled, so that the vapor has no place to form. When filling a lamp that has just been burning, never go near other lights or fire, lest the already overheated vapor should travel and explode. Buy oil with a high flash test (120° Fahrenheit) if you can get it. And never, never fill a lamp while it is lighted. Many lives have been lost by kindling fires with kerosene.

The Danger from Ashes.

Many a fire has been due to the senseless and careless habit of putting ashes into barrels or other wooden receptacles. Ashes and cinders should be kept separate from everything else. Metal cans with covers are the only proper ash receivers. Watch the ashpile, for it may take fire of itself.

Matches, Cigar Stubs, Etc.

Matches should be kept strictly in safe places and in receptacles assigned to them. Scattered around carelessly there are various ways in which fires may start from them. Lighted match sticks, cigar or cigarette stubs, and pipe ashes, carelessly thrown where there is inflammable material, cause frequent fires.

The Fire Drill.

In every school building, particularly if of more than one story, the pupils should have frequent practice in the fire drill. It would be well worth while, in every household also, to have a bit of a fire drill once in a while, or at least to have a few moments now and then spent in a careful consideration of what to do and how to do it if a fire should start in the home.

A few fire pails for the application of water to the fire at its very beginning should be kept in their places which should be known to every member of the household. It is a cheap kind of fire insurance to keep on hand a few fire grenades or hand extinguishers.

If the sleeping rooms are above the first floor, there should be kept within those rooms a rope which one might use in lowering other persons to the ground or down which he might make his own escape. (See Leaflet No. 34.)

If persons are overcome by smoke or gases, artificial respiration should be applied promptly. (See Leaflet No. 13.)

A predetermination of what to do will be an aid in keeping a level head in an emergency, and a level head is needed when a fire occurs in the home, school, hotel, or factory.

Safeguards in Schools.

The law of Maine relating to fire escapes should be known to all of us and should be heeded by all persons who are responsible for safeguarding the schools. That law provides that escapes from school-rooms shall be kept unobstructed, in good repair, and ready for use. Stairs on the outside of the building shall have suitable railed landings at each story above the first, accessible at each story from doors or windows and such stairways, doors or windows shall be kept clean of snow, ice and other obstructions. In school buildings of more than one story there shall be at least two separate means of egress by inside or outside stairway, and each story above the first shall be supplied with means of extinguishing fire consisting of pails of water or other portable apparatus, or of a hose attached to a suitable water supply and such appliance shall be kept at all times ready for use and in good condition.

The rules for fire protection of the schools of New York City provide:

That all classroom doors shall open into the rooms, thus to enable the teacher at the door the better to control the pupils. That all exit or outside doors shall open outward.

Health of Home and School.

LEAFLET NO. 36.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Bad Shoes and Inefficiency.

Many horses are lamed and of little value on account of unintelligent shoeing, and it is equally true that many men and women suffer much and are put upon a lower plane of efficiency because they persist in the use of shoes which change the shape of their feet from the natural to unshapely or crippling forms. The human foot may be weakened, lamed and rendered less serviceable by wrong habits in standing and walking as well as by faulty shoes.

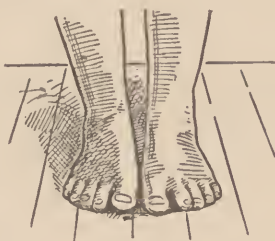


FIG. 1.

The Perfect Foot.

With very few exceptions every child has feet shaped like those in Fig. 1 unless they have been spoiled by ill-treatment. The child of to-day comes into the world with a foot shaped just like that of the baby of a thousand years ago, and the foot of the grown up person of to-day should be just as sharply as was the human foot shown in the statuary of the classic ages of the sculptor's art, if it has not been spoiled by modern shoes. The foot of the adult should have a shape like that shown in Fig. 2 and Fig. 3.



FIG. 2.



FIG. 3.

The Unnatural Foot.



FIG. 4.

The most common deviation of the foot from its natural shape is that in which the great toe has, from its normal line pointing straight ahead, been turned outward so as to press upon the other toes. That is usually the first bad result of wearing ill-fitting shoes, and it is very often the beginning of a vicious circle of foot troubles which include a narrowing of the fore part of the foot and a weakening of its locomotive power; a tendency to assume a faulty gait in walking and faulty postures in standing; and these in turn weaken the arch of the foot and tend to flat-foot; and in turn

again accentuate or fix the habit of the awkward and unnatural gait. These are some, but not all, of the ills which come from having the feet misshapen by faulty shoes.

How to Walk.

In the gait which is naturally taken by the person whose feet are unspoiled and who is properly shod, each foot as it does its part in walking, acts as follows:

The heel as the foot is swung forward is the part which first touches the ground. It touches the ground lightly for the instant until the weight of the body is transferred to the ball of the foot and the outer, lower edge of the sole. The third and final stage in the action of the foot is a propulsive movement given by the toes and more forcibly by the great toe as they leave the ground.

The imprint of the unclothed normal foot upon a level surface shows that the weight of the body, whether in standing or walking, is borne by the heel, the ball of the foot, and the outer and lower portion of the arch of the foot. In the deformity of the foot which is caused by shoes which are narrow at the toe or curved outward at the inner and front part of the shoe, there is a tendency to toe out in walking and this throws the weight more than is natural upon the inner portion of the arch of the foot, the part which is not so well able to bear the strain.

But, if the foot is natural, the great toe, will and should point straight forward as shown in Fig. 2, and the person will not have the awkward toeing-out gait shown in Fig. 4. The straight forward direction of the toe in walking is nowadays more and more insisted upon as correct and good form. The toeing-out habit and the toeing-out track indicates a foot which has been distorted or weakened.

Health of Home and School.

LEAFLET NO. 37.

ISSUED BY THE STATE BOARD OF HEALTH OF MAINE.

Hygiene of the Foot.

The changes in the feet caused by wearing ill-fitting shoes not only cause much inconvenience and suffering, but the persons who are the victims of bad shoes may be forced by pain and incapacity to give up positions which they would like to occupy. Many young men have been rejected as recruits to our military service or as applicants of positions as patrolmen or firemen in our cities on account of weak feet or flat-footedness. Many nurses have been discharged from hospital service on account of the breaking down of feet which have worn bad shoes.

But this is not all. Symptoms due to these foot troubles are not always referred to the feet. It may seem strange, but it is true that the pain or discomfort is often felt in the calf, the knee, thigh, or hip, even when the diseased condition is in the foot alone. Persons who have been crippled by what they have termed rheumatism, sciatica, and neuralgia, in regions far above the foot have been cured by relieving the flattened arch or other foot troubles.

The Causes of Weak Foot.

The following are the principal causes of flat-foot: (1) Ill-fitting shoes throw the toes out of line and interfere with the normal action of the muscles in the proper development of the foot. (2) High heeled shoes if long worn, sometimes cause serious trouble by permanently shortening the heel ligaments. (3) Deformities of the toes due to their being thrown out of line by badly shaped shoes are often the beginning of more serious foot symptoms, for instance, flattening of the arch and a splay-footed gait. (4) Corns, bunions, and ingrowing toenails cause a person to stand or walk with the feet in unnatural positions; causing strain which leads to deformity. (5) Lack of proper exercise of the feet untrammelled by faulty shoes.

Correction of Foot Troubles.

The troubles of the feet which have been mentioned in this leaflet and in Leaflet No. 36 may, if far advanced, need the services of the surgeon or the advice of some person more of an adept than is the ordinary shoe dealer in giving temporary mechanical help to those parts of the foot which need it. But troubles which have for some time been present are often greatly improved or cured by intelligently applied efforts at correction.

Shoes.

The main factor in causing unsound feet is the ill-fitting shoe. The first corrective measure in most cases is the fitting of the feet with shoes which shall not increase the trouble, and which may permit the feet to return to their normal shape so far as that is possible. In Fig. 1, the dotted outline shows the sole of a shoe like many which are on the market. It is not extremely narrow, but it is rounded off at (A) so that the constant wearer of such a shoe will have the great toe thrown out of line and will be likely to suffer the attendant evils. While a shoe like this exerts harmful pressure at (A), it would conform more nearly to the shape of the normal foot if it were rounded off more at the point (B).



FIG. 1.

In Fig. 1, the continuous line shows the outline which is much more nearly like that which might be called the hygienic shoe, that which is required by the foot which is somewhere nearly perfect in outline. The inner line of heel and toe are nearly straight. The other points in the construction of the sensible and hygienic shoe are: The heel shall be low and broad. The toe shall not be turned up too much as that interferes with the propulsive action of the toe as it leaves the ground, and also tends to weaken the arch of the foot. That portion of the sole between the heel and the ball of the foot should not have too much of a thrust upward into the sole of the foot so as to press too hard upon the muscles in this region. Shoes are less likely to harm the foot if they are made without caps. Fig. 2 shows the shape of the new style of shoe for use in the U. S. Military Service.



FIG. 2.

Exercises.

Muscles extending across the arch of the foot from the lower surface of the heel to the base of the toes have more to do with maintaining a proper shape of the arch than the ligaments have. The healthy, normal shape of the foot depends largely upon the strengthening of these and other muscles of the foot and ankle. The best way of doing that and of remedying weak feet and flat feet is by exercising those muscles, carefully graduating the exercises at first.

Walking is one of the best exercises for this purpose, and particularly walking up and down stairs.

Another excellent exercise is rising high on the toes, then slowly lowering the body until the heel touches the ground. Continue repeating this movement for five or six minutes, or until these muscles begin to feel tired. Repeat this three or four times a day.

On the Management of Outbreaks of Smallpox.

When smallpox or persons who have been exposed to smallpox come into your town, act quickly. When there are rumors of infectious persons or things, investigate at once.

The powers of local boards of health are ample enough in almost any contingency. See "Rules and Regulations" and powers and duties of local boards of health in "Abstract of the Health Laws."

The *duty* of the board is to act promptly. The whole matter is in the hands of the local board. No time should be wasted in running around to get the consent or approval of the municipal officers or anyone else. Your town will be obliged to pay all reasonable and honest bills, and the more promptly you act the smaller the bills will be.

If any person breaks quarantine, violates the provisions of the health laws, or interferes with the work of the board so as to prevent the execution of the provisions of the law, have him arrested at once. If infectious, he can be held in any kind of a "shack" until he can be disinfected and brought before a justice for trial.

Suspects, or Exposed Persons.

Trace out as speedily as possible every person who has been exposed to the infection of smallpox. Make a note of the date of exposure.

When located, vaccinate every such person as soon as possible. Vaccinate also all of the members of his family or of the household in which he lives.

As to the question of quarantining a person who has been exposed to smallpox:

If he is a transient, keep him under close quarantine. If he is a permanent resident and trustworthy, keep him under observation.

Persons who have been exposed to smallpox should be considered under two classes:

(1) Those who have been exposed but once to the infection and are immediately vaccinated. These should be kept

under observation until there are unmistakable evidences of the success of the vaccination, when they can be discharged from further surveillance.

(2) Persons who have been exposed to smallpox and several days (over four) have elapsed before vaccination. These should be kept under observation sixteen days from their last possible exposure. The wearing of their own infected clothing should be deemed a continuation of their exposure.

As soon as a person has been isolated on account of exposure to smallpox, give him a change of clothing (in warm weather, overalls and a blanket may suffice), have him disinfect his hands, face, head and beard, at least, by washing in a 1:1000 solution of corrosive sublimate. For the whole body, 1:2000 or 1:3000 would be safer. Disinfect his clothing as soon as possible and have him put it on again.

Persons who are under quarantine or under observation on account of exposure to smallpox should be inspected by a physician at least once daily during the period of incubation.

Vaccination.

In the vaccination of persons who have been exposed to smallpox, "time is money." The failure of prompt vaccination sometimes costs towns much money. The persons exposed and all members of their families should not only be vaccinated as quickly as possible, but the vaccination should be done again and again, if necessary, until a "take" results, or there are other good reasons to believe that all these persons are fully protected.

Prompt vaccination is required for the exposed person that the vaccination may get ahead of smallpox and modify it or prevent it entirely, and for the persons housed or associated with him the aim should be the speediest possible "takes," so that these persons may be fully protected if the person already exposed develops smallpox.

If, after persuasion and reasoning with them, suspects refuse to be vaccinated, apply an absolute quarantine, just as long as may be necessary.

As to the value of vaccination, it may be said that the protective power of a recent and successful vaccination is nearly if not quite as absolute as that from a previous attack of smallpox.

As to the dangers and diseases which may come from vaccine virus, it is safe to say that they hardly exist with the strict governmental supervision of the production of vaccine

which is now in effect, and that undue soreness of the arm as a result of secondary infections of the vaccinated spot with the germs which are always present in the skin and in the clothing, and which sometimes cause inflammation and even suppuration may be controlled by local applications when occasionally they are needed.

The health officer, even if not recently vaccinated, need not hesitate to attend promptly to any duty which an emergency may present. If he is exposed to smallpox and is carefully vaccinated soon afterward (within one or two days, although the sooner the better) the vaccination, on account of its more rapid development will get ahead of the smallpox and prevent it.

Quarantine.

The quarantine of every smallpox patient should be prompt and absolute. If there is the slightest reason to suspect that the members of the household may not be trustworthy, a guard should be placed over every infected house day and night, and special visits should be made at unexpected hours to see whether the guards are doing their duty faithfully.

Nurses.

When it is known that persons have been exposed to smallpox, the local health officers should promptly arrange for the worst. Facilities for the quarantine and the treatment of the sick should be considered before the actual cases are on hand. Nurses and medical attendants should conditionally be engaged in advance.

For nurses, have persons who are thoroughly protected by a recent successful vaccination, or who have had smallpox.

Hospitals and Camps.

When smallpox breaks out, the question will often arise whether the sick shall be kept and cared for in their houses, or the houses in which they are found, or shall be removed to other quarters. When practicable to do so, their removal is desirable. If removed, the house from which they are taken should be disinfected with the least possible delay.

When a house is not available as a hospital, a temporary camp or shed may quickly be built, which will be safe and comfortable for patients and attendants.

Persons who have been exposed to smallpox and persons who show uncertain symptoms of the disease should not be confined with smallpox patients, until the diagnosis of smallpox is clear.

Disinfection.

For advice about disinfection see Circular 220, "The Work of Disinfection."

Brief Points for Non-Medical Members of Boards of Health.

The period of incubation of smallpox—time from exposure to the first symptoms of the disease—is twelve days on the average. It may be longer or shorter. In about three days more the eruption begins to show as small red specks, and then as pimples or papules, at first on the forehead and wrists, gradually extending over the body so that the eruption becomes general in about twenty-four hours. On the first and second days of the eruption it is papular, and the characteristic "shotty" sensation is obtained by passing the fingers over the skin. During the next twenty-four hours the papules become vesicles, with clear summits.

In ordinary cases the vesicular stage lasts about two days and then the vesicles, increasing in size and turning yellow, become pustules, remaining so about four days before they begin to dry down so that scabs are formed. But in the mild and atypical cases of smallpox the eruption, or much of it, may go through its transformation much more rapidly, or much of the eruption may abort at various stages, going no farther than the papular or vesicular stage.

The onset of the disease is usually sudden with chilliness, fever, headache, pain in the limbs, nausea—some or all of those symptoms, just about as they are in an attack of influenza, or grip. With the appearance of the eruption, or some hours before, there is a sudden drop in the temperature, the other symptoms get better or disappear, and many smallpox patients then say they feel as well as ever except the annoyance due to the eruption. In mild cases there is no return of the symptoms, and the patients need but little of the attention of the physician until his judgment is wanted to determine whether the time has come when they may safely be released from quarantine after the required disinfection has been done. But in the severer cases with profuse eruption the temperature rises again on the seventh or eighth day and this "secondary fever" is the most critical stage in bad cases.

Smallpox is an intensely infectious disease, but rather less so before the eruption has appeared. The patient is infectious until the skin is entirely cleared of crusts, and until the secondary desquamation of the pock marks has ceased.

The period during which it is necessary to quarantine for the safety of the public varies in different cases from three to six weeks, or even longer.

Is Vaccination a Good Thing?

Issued by the State Department of Health of Maine.

Is there any one thing relating to the welfare of the human race that remains wholly unquestioned? To those who know what vaccination has done and is doing for the world, it is hard to understand how persons can doubt its value. Arguments against vaccination rest almost wholly upon these declarations: 1. "It is useless." 2. "It is dangerous." 3. "It is an invasion of personal liberty."

Is it useless?

In 1760 to 1765, before vaccination was known, it was estimated that 15,000,000 human beings died of smallpox every 25 years. Before the House of Commons, in London, the statement was made in 1802 that "It is proved that, in this United Kingdom alone, 45,000 persons die annually of smallpox. The French minister of the interior reported in 1811 that 150,000 people died every year of smallpox in France. The official Danish records say that in Iceland in 1707 smallpox destroyed 18,000 out of the total population of 50,000. Nearly two-thirds of the population of Greenland was taken away by smallpox in 1734. In 1752, when the total population of Boston was 15,884, a severe epidemic of smallpox started there. Of this number 5,998 persons previously had smallpox, in this epidemic 5,545 others had the disease, 2,124 inoculated themselves with smallpox virus, hoping thus to escape with a milder attack, 1843 people fled from the town to avoid the danger of infection. When the pestilence was over, only 174 persons were left who had never had smallpox.

Vaccination is the only reason why such smallpox calamities do not now swoop down upon us. It is not because of better surroundings, for smallpox and measles are two of the diseases that go on irrespective of sanitary conditions. It is merely a matter of exposure to infection, with the saving grace of vaccination helping us in smallpox.

When the United States took charge of the Philippines, smallpox had for a long time been disastrously prevalent in the

islands. Just before the American occupation, in the provinces near Manilla, there had been 6,000 or more smallpox deaths annually, but the annual report of the Bureau of Health for the Philippine Islands stated that in 1907, after a systematic vaccination of the people had been done, not one smallpox death occurred.

The same lesson comes from Cuba. The disease was rampant in the island before America took temporary charge. Six per cent of the total number of deaths in Havana was from Smallpox. General vaccination was done. For years after that there were no cases of smallpox save those brought on vessels, with one exception. That was a male nurse in the hospital for contagious diseases to which a Syrian girl with smallpox had been taken off a boat. All the other nurses and doctors were protected by vaccination, but this man who took smallpox and died of it evaded vaccination by deception.

The same results of the American occupation of Porto Rico are noted. Smallpox was banished by vaccination. Before the Chinese-Japanese War, smallpox epidemics were frequent in Japan. General vaccination stamped it out and smallpox epidemics have remained events of their earlier unenlightened years.

In those European countries where vaccination is compulsory, smallpox almost never arises among their own people; in those countries where vaccination is neglected, epidemics of smallpox are frequent. In Sweden, before the vaccination era, the deaths from smallpox were 2,045 per million of their population; with optional vaccination, 408 per million, with compulsory vaccination rigidly enforced, the rate from 1884 to 1893 was from 0.2 to 5 per million.

In earlier years wars were again and again lost by the neglect of vaccination. In the Franco-Prussian War, the French army had 50,000 cases of smallpox and many deaths; the German army, more carefully protected by vaccination, had only 300 cases. In the military administrations of all advanced countries vaccination is now considered an indispensable piece of strategical preparedness.

Physicians the world over trust to vaccination, and to nothing else, to protect themselves against smallpox. Two irregular practitioners in Maine a few years ago who did not believe in vaccination took smallpox. One died, the other was with difficulty saved from the same fate.

It is true that vaccinated persons may take smallpox. Sometimes persons have smallpox more than once. Persons with their second illness with smallpox have been seen in Maine in

recent years. One of the kings of France died in his second attack of that disease.

One vaccination has protected all through life even when there has been prolonged and intimate association with smallpox patients, but it is not best to trust too long to a single vaccination. Vaccination in early childhood and again ten or twelve years afterward, as is done for everybody in some countries, gives the people such a degree of immunity that epidemics of smallpox are unknown among them.

Is Vaccination Dangerous?

When the protective covering of the human body, the skin, is broken by a scratch, cut, or puncture, or by the breaking of a festering pimple or a boil, there is always the possibility of results that may be annoying or painful, or even fatal.

When vaccination is done we aim to produce a vaccine vesicle and pustule which will be protective against smallpox. This vesicle need not be a larger or more serious sore than a single one of the pustules covering the body of the smallpox patient in numbers ranging from a few to a thousand or more.

Ordinarily, the slight local annoyance at the site of the vaccination is the only troublesome result. If the vaccination does not receive proper care, is irritated, or if dirty fingers—which mean infectious fingers—come in contact with the vaccine sore, it receives a secondary infection which makes unnecessary trouble, and the vaccinated person may have a slight rise of temperature for a day or two, but this rarely occurs.

In smallpox, on the other hand, a secondary rise of temperature about the eighth day of the eruption is a characteristic symptom of the disease in all but mild cases, and this secondary fever is due to the absorption into the system of the poisonous matter in the smallpox pustules, and in severe cases of smallpox this blood-poisoning and its accompanying fever are intense. This blood-poisoning constitutes the critical stage of smallpox. That of vaccination is nothing in comparison with it.

One of the arguments of anti-vaccinationists is that if you are vaccinated, there is danger of having grafted into your system, syphilis, tuberculosis, or some forms of blood poisons. The questionable wisdom of that advice is shown by the fact that long ago arm to arm vaccination ceased; that all the vaccine now used is taken from calves which must be proved to be free from disease: that syphilis is never present and cannot be inoculated into the bovine race; that calves, at the ages used are almost never tuberculous (in one city one tuberculous calf only in 34,400 slaughtered and inspected, in another, one

tuberculous case in 22,230; nevertheless, before the vaccine is used, each calf in the vaccine establishment is slaughtered and carefully examined against the hardly existing possibility of tuberculosis; furthermore, the vaccine from the calf is put into a glycerine mixture which destroys every tuberculosis germ that might be present. It destroys them, when in experimental tests the tubercle bacilli are added in innumerable numbers. This "glycerinated vaccine" destroys just as effectively all the germs from which we might possibly get blood-poisoning.

A statistical investigation made in France some years ago showed that there was a decidedly smaller prevalence of tuberculosis among their people who had been vaccinated than there was among those who chose smallpox instead of vaccination.

The truth of the matter is that all the danger there is from vaccination comes from the possibility of secondary infection. As any broken place in the skin or slight sore may receive secondary infection, the place of vaccination should be kept clean, not rubbed or irritated, and from the sixth day or so, after it is certain that there is a "take," an antiseptic application should be at hand for application to prevent undue soreness.

As an example of the slight possibility of dangerous results from vaccination, in the Philippine Islands the United States authorities vaccinated, within a few years, 3,515,000 persons without a single death or any serious complications.

"It is an Invasion of Personal Liberty."

Is it? There might have been a chance for that question between Robinson Crusoe and his man Friday. But we, still standing for personal liberty so long as our acts do not conflict with the welfare and safety of other persons, have no right to establish a powder-house in a thickly populated community nor to maintain a nuisance which may endanger the health or lives of our neighbors, or otherwise be prejudicial to them. In the matter of smallpox we have personal responsibilities as citizens of our communities and of our state. If we fail to protect ourselves by vaccination and as a result have smallpox, we make public nuisances of ourselves. If we remain unvaccinated and escape smallpox we are an imposition upon others who, with more sense and a keener appreciation of their duties as good citizens, have actually protected us in some degree by having themselves vaccinated and thus lessening the "inflammable" material, and so making the chance for smallpox "conflagrations" much smaller than it is in a wholly unvaccinated community.

The Danger From Measles.

State Department of Health of Maine.

People generally have been ranking measles as one of the diseases from which there is but little danger and therefore one with which it isn't worth while to bother. But the fact is that measles is a very serious infectious disease. The number of deaths from measles in our state is on the average more than twice as many as from scarlet fever and is more than one-half the number of the deaths from diphtheria.

But this is far from being the whole story of the measles danger. Many children are left for some time, or for a long time, with impaired health; some acquire impaired hearing or become deaf from suppurative inflammation of the middle ear; nearly all are left with their eyes so weakened that defective sight may be the result if they return to school too soon. In military encampments the advent of this disease is always considered a serious matter, for the rapidity with which it spreads and for the high death-rate which, in such places, accompanies or follows an outbreak.

Aside from the death-rate which is charged to measles, many lives are lost from pneumonia, bronco-pneumonia and other affections which are the sequels of measles; and tuberculosis, aggravated by or following measles, claims many victims.

Childhood's Danger Period.

In the early years of childhood the danger from measles is especially great. In the deaths from that disease in a series of years in Maine, 67% of them have been in children under five years old, and 75% under ten years. It is a foolish mother who says to let the little ones have measles early and be over with it. Children under five years old particularly should be

guarded carefully from the infection of measles. If it is thought that they must have it, they should be protected from the disease until they are at least ten or twelve years old.

How Measles is Spread.

The most infectious period is in the catarrhal stage before the rash comes out. It may be spread also during the stage of the eruption. It is spread chiefly from the sick person directly to the well person in such ways as these :

1. Infection given off by the sick person in the discharges from the nose and mouth may be thrown into the air as minute particles or droplets in the act of coughing or sneezing and in the sick-room may be breathed in by other persons.

2. One may catch the disease by using the same spoons, cups, or other things which have been used by the patient before those things have been sealded or otherwise disinfected.

3. Fingers may carry the infection to one's lips or nose after shaking hands with a measles patient or handling his handkerchiefs, towels, or clothing or other things which have been soiled by the watery discharges from his nose, eyes, or mouth.

4. It may be conveyed by the nurse or mother who cares for the sick one if she has not been long or far from the sick room.

When Measles is Suspected. What ?

Altogether the safest way is to have the advice and care of your family physician. But, the very first thing to do, not waiting for the doctor to come, is to put the sick child into a room by himself away from the other children. Into that room carry everything which the sick child has used or played with since the first symptoms showed themselves—towels, napkins, cups, spoons and toys, especially all the things that he may have had in his mouth.

Sick-Room Rules.

1. The other children and all unnecessary persons must from the first be kept away from the sick-room. If at first you must have help and no other help is at hand, an older child or other person who has had measles (not German measles which is an entirely different disease) may help you.

2. If the mother must leave the sick-room and do the cooking or other service for her family, the first precaution for her to think of is to wash her hands very thoroughly before she goes near other persons or touches anything outside the sick-room, particularly food or eating or drinking utensils, or towels or other things which may be used about the face. It would be much safer if the mother or nurse would wear in the sick-room a loose protective gown which could be put off as she leaves the sick-room.

3. Receive all discharges from the nose and mouth upon pieces of cloth or soft paper toweling, put them into a paper bag and burn the bag and contents when nearly full. After handling these things, the attendant should wash her hands carefully.

4. Further, with the view of keeping the infection in the room, never let anything go from the room (towels, handkerchiefs, the patient's clothing or bed clothing, eating or drinking utensils, toys, or anything else that has been in use about the patient) until they have been made safe by boiling or by placing them in a disinfection solution.

5. Do not overheat the room. Provide good air but avoid drafts. Let into the room as much light and sunshine as possible. That will insure, in some degree, against the respiratory diseases which carry off so many children after measles. Shade the eyes if need be.

6. Unless the child who is sick with measles has intelligent care, there is great danger of the various complications which often follow measles in the days or weeks of convalescence.

Schools.

Children and teachers in the family who have had measles many continue at school if they are isolated from the other members of the family. Children who have not had the disease, but who have been exposed to measles, must for two weeks be kept entirely away from other children—from school, Sunday school, moving picture shows, and all other meeting places of children.

With the cordial cooperation of parents, teachers, and boards of health, as is required by our health laws, child life

could be much better protected and the loss of school time and school money due to school epidemics would be very much lessened.

Disinfection.

Fumigation is not required after measles, but instruction should be given that all the clothing, bedding, sheets, pillows, pillow cases, etc., which can be thus treated shall be boiled or disinfected by soaking in a disinfecting solution. For this purpose, Formaldehyde or Kreso (Solution 7 or 8 of the State Department of Health, given in Circular 220) may be used.

During the illness the sick-room and its contents should be kept as free from infection as possible by the continuous process of disinfection and cleansing. When the patient has left the sick-room, a few day's airing and exposing to as much sunshine as is possible may be trusted to free the room from danger, for, as has been stated, the infection of measles is short-lived when exposed to the action of free air, drying and sunshine.

Whooping-cough.

State Department of Health of Maine.

To lower the unnecessary death-rate of the babies and younger children, this disease, whooping-cough, as well as measles must be controlled better than it is. Like measles, whooping-cough is a dangerous disease for young children. In the last six years, measles caused 303 deaths in Maine, while whooping cough did still worse, for 430 deaths were caused by that disease in the same time.

How Spread.

The infective agent of whooping-cough is received into the system through the nose and mouth, and after the child begins to show symptoms, he gives off the infection in what comes from the nose and mouth. Particularly when coughing, the infection is thrown into the air so that other persons may breathe it in. The infection may also be carried from the sick to the well by means of infected fingers, spoons, towels, drinking cups, or other things which may carry the infection directly from infectious persons to the mouth or nose of others.

Infective Period.

After a child who has never had whooping-cough has been exposed to that disease, from 6 to 14 days pass without a symptom. Then if he has taken the disease, the eyes of the child become reddened and he appears as though he had a slight cold. The cough, instead of becoming better in a short time as in an ordinary cold, becomes more frequent and more

troublesome. After some days, and in many cases it is some weeks, the spasmodic or "whooping" stage begins.

From the day in which the first symptoms show themselves, the child is infectious and may give the disease to other children; and from the beginning of the symptoms for five weeks and until the whoop has ceased entirely, the child should be kept from school and Sunday school and away from all children who have not had whooping-cough. So, just as in measles, the work of keeping the disease from spreading must begin early—with the child who has been exposed from the time of the very first symptoms or before.

Weighing the Danger.

Does the mother who exposes her baby to the infection of whooping-cough weigh the danger? If she carelessly or ignorantly lets her baby, in its first year, have the disease, she cuts down its chances of living from ten to fifty per cent. That is, from ten to fifty of the babies out of every hundred who suffer an attack of whooping-cough die. And then, in addition to that, the various complications which follow whooping-cough carry off many other children.

Nine-tenths of the children who die from the results of whooping-cough are taken off by broncho-pneumonia. Tuberculosis somewhat frequently follows whooping-cough. The severe and frequently repeated attacks of coughing, ending in vomiting, make it very difficult to keep up the nutrition of the child. Convulsions and even hemorrhage into the brain sometimes result from the intense congestion of the head and brain, which accompany what very often looks like a life and death struggle of the little one to get its breath.

For the Welfare of the Sick Child.

1. As the death-rate among children who have whooping-cough is very much greater when they have the disease in their first few years, they should be guarded from this danger in their earlier years. Children under five should be carefully shielded and so should all who are sick or enfeebled by other causes. It should also be remembered that whooping-cough is more dangerous in the cold season than in warm weather.

2. As the death-rate is much greater among children who are not well nourished and among those where the air and other

conditions in the home are not good, they should be kept in the open air as much as possible when the weather permits. When indoors they should have well-ventilated rooms, but they should be protected from direct drafts. It is still more important not to let them stay in too hot or too dry an atmosphere.

3. Indoors or out, the life of the whooping-cough child should be quiet mentally and physically. Too vigorous exercise or the excitement of laughing or crying serves to bring on attacks of coughing and the vomiting which often accompanies the paroxysms of coughing.

For the Safety of Other Children.

One of the most eminent of our medical authors says: "There is perhaps no other disease causing the same amount of suffering and the same danger to life as whooping-cough in which there is an equally shocking disregard of the rights and feelings of others."

Whooping-cough is one of the diseases that must be reported to the local board of health, and while strict quarantine of the family is not required, the local board has full authority to require parents to keep infectious children from coming in contact with other children.

For the good of the children, parents and teachers should be willing to work with the local boards of health to carry out these rules.

1. Whether indoors or out, keep the child who has whooping-cough away from other children who have not had that disease. It is just as important not to let the child spread infection who has been exposed and is showing those first symptoms which may mean whooping-cough—reddened eyes, a little cold in the head, and a beginning cough—for the disease is infectious at this early state. This means that we must think and act early.

2. For the safety of children in the same family who have not had whooping-cough, the sick one should be especially cared for in a room by himself. The infection usually does not involve the whole house; but the danger to the other children is in coming in contact with the sick one or in having the infection *carried* to them: (a) by the hands and perhaps by the clothing of those who take care of the sick; (b) by the things which have been used by the sick one.

3. The attendant upon the child with whooping-cough should have washbasin, soap and towel used by no one else, and when she must leave the sick one she should wash her hands very carefully before she touches things to be used by other persons.

4. The sick one must have drinking cups, spoons, towels, napkins, handkerchiefs, and everything else for his own use which might carry infection to others if they are used in common, for the surest way of carrying infection is by means of those things which may carry it directly to the mouth or nose.

5. The infection of whooping-cough is short-lived. A formal disinfection of the house is therefore not needed if the child recovers. If it dies, particularly before it has been sick long, the sick-room and its contents should be carefully cleaned and disinfected—cleansing, airing out, and exposure to sunshine. Disinfect the things used by the sick child by washing, boiling, or by steam disinfection.

Save the babies. Eliminate whooping-cough and measles. These two diseases, and the troubles that follow them, kill many babies every year.

Advice about Typhoid Fever.

ISSUED BY THE STATE DEPARTMENT OF HEALTH OF MAINE.

We have very much less typhoid fever in Maine than we had twenty years ago, but we must cut down the death-rate from this disease even more. Read this circular, remember it, and help!

Source of Infection.

The source of infection is the intestinal and bladder discharges from persons who are sick with typhoid fever or who are so-called healthy "carriers." We get the infection by eating or drinking particles of infectious material from those discharges.

How Infection is Spread.

These are some of the ways in which the infection gets into the mouth so as to be swallowed:

(1) The hands of the nurse or other person caring for the sick one may carry the infection to her own lips, or may infect her own food or that for other persons; (2) the sources of water supplies become polluted so that infection may be received through drinking water; (3) milk is often the medium through which typhoid fever infection may be received, and other foods which have been handled by persons who have recently had typhoid fever, or who come from places where typhoid fever is present, may also be infected; (4) by "carriers" as above noted.

Prevention.

It should be remembered that typhoid fever may be taken directly from the patient just as diphtheria or scarlet fever is taken. For the prevention of the further spread of typhoid fever after a case has occurred in a home, the following twelve rules should be put into practice.

Rule 1. All discharges from the patient should be disinfected promptly and thoroughly. This disinfection should be begun with the first suspicious symptoms and should be continued late. A quantity of the disinfecting solution three or four times as large as the bulk of the discharges should be poured over them and left three or four hours after thorough stirring and mixing. Your doctor and the board of health will advise.

A surer way is to carry out the vessel and mix with the discharges eight or ten times their bulk of boiling water. Keep from rapid cooling.

Or, put into the vessel a teacupful of fresh, unslaked lime; then pour over it a pint or a quart of boiling water, and mix well. Cover and keep from cooling.

Rule 2. Persons who are caring for typhoid fever patients should be extremely careful to wash very thoroughly and to disinfect their hands after they have attended to the wants of the patient. There is great danger of the spread of infection by means of infected fingers.

Rule 3. Very great care should be taken to prevent the soiling of the personal clothing and of the bedding of the patient. The mattress

should be protected by a rubber blanket. Any clothing which is soiled by the discharges from the patient should promptly be removed and put into a disinfecting solution. Many nurses who attend typhoid fever patients contract the disease. They are endangered, not only by infection carried upon their fingers, but by that which arises as dust from the clothing and bedding of the patients which have been soiled and then dried.

Rule 4. The patient should have cups, spoons, and all other eating utensils for his exclusive use. They should be washed in, or close to, the sick-room and their general use should not be resumed until they have been thoroughly scalded in boiling water.

Rule 5. Nothing should be eaten by attendants in the room which is occupied by a typhoid fever patient. There would be much danger of swallowing infection while partaking of the food. All remnants of the food brought to the sick-room for the use of the patient should be promptly burned.

Rule 6. Many serious outbreaks of typhoid fever are due to milk which has been infected with the germs of that disease. A few typhoid germs introduced into milk by the foot of a fly, or by the fingers of a person who has been near a case of typhoid fever, or by anything which comes from the patient, finds milk so good a culture medium that the few germs may very quickly become thousands. Boiled or mashed potato also serves as a medium for the rapid growth and multiplication of the bacteria of typhoid fever. These facts make it clear that the food and drink for a household in which there is a case of typhoid fever should be heated up just before it is served.

Rule 7. The sick-room should be carefully screened, and flies should be rigorously banished. If any gain access to the room, they should be promptly killed with a swatter kept on hand for that purpose.

Rule 8. Flies should be banished, not only from the sick-room and from the other rooms of the home, but there should be very great care to have the privy so built and so cared for that flies may not enter the privy vault so as to be distributors of infection. Flies play a dangerous part when typhoid fever has entered the home.

Rule 9. Even after the discharges from the patient are thoroughly disinfected, there cannot be too great care in the final disposal of them so that there may be no possibility of the pollution of the water of any spring, well, brook, or other source of water supply.

Rule 10. Unnecessary persons should not be allowed to visit those who are sick with typhoid fever, for, when trained nurses under hospital regulations, very often take typhoid fever, we may safely say that there is much greater danger of other visitors taking the disease.

Rule 11. Typhoid fever, formerly a severe scourge during military operations and in military encampments, has been practically banished from our army and from the military and naval forces of some other countries by means of protective inoculation. The typhoid vaccine has proved so valuable that there should be no hesitation in civil practice in using it much more freely than it is now used. Nurses and travellers and others who are especially exposed to the danger from typhoid fever should be protected by it. Such typhoid prophylactic may be obtained free of charge from the State Department of Health.

Rule 12. In addition to the work of disinfection which should be carried on during the whole course of the disease, a careful disinfection of the room, bedding, clothing, and other things which have been occupied by the patient or used by him, should be done under the direction of the local board of health.

L. D. BRISTOL, M. D.,
Commissioner of Health.

Guarding Against Influenza and Common Colds

Issued by the State Department of Health of Maine

Characteristics.

Influenza or grip are two names for an infectious disease that has long been with us. It is characterized by periods of comparative quiescence, usually of long duration, during which there are only scattered cases and smaller outbreaks, followed after the lapse of years by very serious epidemics of increased malignancy and of wide distribution.

The time which passes after a person takes the infection into his system to the onset of the disease is so short, usually only twenty-four to forty-eight hours, that a whole family may be down with the disease at nearly the same time with no well ones to care for the sick.

How Spread.

While we have not yet settled the question as to the specific germ that may be the real cause of influenza, as we have not for that of scarlet fever or measles, we do know that influenza is communicated from the sick to other persons just as these two other diseases are spread—by direct or indirect contact, and that the closer the contact the greater the danger of infection.

The infection of influenza is given off from the mouth and nose of persons who have the disease, or who have recently had it, and is taken in through the mouth or nose of other persons who take the disease. Some of the ways in which infection is passed on from sick or infectious persons to others are these:

1. By infected eating and drinking utensils—anything which has been to the mouth of infectious persons, or has otherwise been infected and then goes to the mouth of other persons before it has been scalded, or sterilized in some other way.

2. By the droplets sprayed into the air by infected persons when coughing, sneezing or talking loudly. The dan-

ger of droplet infection is limited to an area of only a few feet around the sick person.

3. Finger-borne infection. The fingers of attendants or visitors, soiled by coming in contact with the secretions from the mouth or nose of the sick one, or with anything else that has thus been soiled, may carry the infection to the mouth or nose of the owner of the fingers or to other persons by food or eating implements handled by the infected hands.

4. Towels, handkerchiefs and other things used in common may spread the infection, and perhaps a lesser danger exists for a short time in the direction of the clothing, bedding, or furniture and rooms used by persons sick with influenza.

The Symptoms.

The onset of the disease is usually, but not always, abrupt. In most cases there is a feeling of chilliness followed by fever with pains in the head and back and limbs, or "aching all over" as some sick ones say. The patient looks sick and there may be running from the nose or a cough. The temperature rises to 101° or 103° F. or more. But the symptoms vary so much in different outbreaks, or in the same outbreak in different cases that several types of the disease are recognized, among them the catarrhal respiratory type, the most common, the gastro-intestinal type characterized by vomiting and diarrhea, the nervous type, and very often the symptoms are mild resembling those of a common cold or slight fever.

But the greatest danger from influenza is pneumonia or other secondary infections that so often follow as complications and sometimes carry the case death-rate up to a frightful figure.

Aside from well-marked cases of influenza, the infection may be carried and distributed by persons who have very mild symptoms, those of merely a slight cold. In epidemic times particularly, such persons should have a care against transmitting infection.

A Notifiable Disease.

Under the present rules and regulations of the State Department of Health, cases of influenza or grip must be reported to local boards of health by physicians and householders.

Restrictive Measures.

Fortunately those precautionary measures which local boards of health are empowered to carry out are best for all concerned, the patient included. Local health officers may advise and enforce such degrees of isolation of infectious persons as may be deemed best under the conditions found in each case.

Persons who have the disease should be isolated, but the wage-earners in the same family, remaining well and showing no symptoms indicating the probable onset of influenza, and staying away from the sick-room, may be permitted to attend to their work.

Personal Safeguards.

The following rules should be borne in mind:

1. When grip is prevalent stay at home as much as possible, particularly cut out unnecessary visits to public places and unnecessary travel. Walk when you can do so instead of taking the street car. The exercise and the breathing of the open air will tone up the system. Increase the power of resistance of your body, by regular and rational habits of living as regards work, sleep, play and food. Do not visit persons who show symptoms of grip or a cold, if you can well avoid doing so, and do not give a cordial reception to persons showing such symptoms who unnecessarily obtrude their presence upon you.

2. Eating and drinking utensils that have not been scalded after they have been used by others are a great danger. In addition to the ordinary washing, boiling water should be poured over forks, spoons and cups as a routine precaution particularly when influenza or other infectious diseases are around. Shun the soda counter where the glasses are not carefully cleansed and sterilized after each use of them. Avoid uncleanly restaurants.

3. Beware of finger-borne infection. Keep hands away from mouth and nose. Wash your hands carefully before eating and avoid things that have been handled by the infected fingers of other persons.

Guarding the Sick.

With the oncoming of the symptoms of influenza the sick person should go to bed promptly and call his physician without delay. The great danger is from broncho-pneumonia and other serious complications which may largely be avoided by absolute rest in bed and by following the other bits of advice given under this subhead.

A leading Chicago physician writes: "Over and over again this was the story: the patient had an ordinary attack of influenza, during which he did not stay in bed continuously. He felt a little better, got

up, and was taken sick again, this time with severe symptoms, and broncho-pneumonia soon developed. On the other hand, patients who from the beginning of their sickness were kept in bed continuously and who stayed in bed until they had been perfectly well two or three days, seemed to be quite immune from this complication."

A Boston physician's experience was: "The disease was aggravated, prolonged or caused to relapse by too early leaving of bed."

Extremely important it is, to guard the patient against chilling. Instead of a resort to the toilet room, bed-pan and urinal should be in use. A carefully managed task it should be to keep profusely perspiring patients free from wet clothing: The nurse on removing the wet garments should rub him dry with a warm, dry towel, and apply warm dry clothing, all being done under the protection of the bed covering. Wet garments very rapidly chill the sick one.

Meanwhile safety also lies in the direction of as abundant a supply of fresh air as may be had with the avoidance of direct drafts and the chilling of the sick one, particularly when the skin is moist.

A fluid diet exclusively should be the rule during the course of the fever and an abundance of drink should be given—water or water with lemon, grape, or other fruit juices.

Visitors should be excluded from the room for their own safety and that of the patient.

The secretions from the nose and throat should be received on pieces of paper, paper napkins or pieces of cotton cloth and burned promptly. Save as carefully as possible, clothing and other things about the patient from being soiled. There is danger not only from the fresh sputum and nasal discharges, but contaminated articles, soon after drying whisk infectious dust into the room when shaken or moved too vigorously.

Instruct the patient to hold a handkerchief, paper napkin, or piece of gauze before his face while coughing.

Aside from the danger of aerial transmission for only a few feet from the sick one, and in the infectious room, the infection may easily be transmitted by the fingers. Careful and prolonged washing of the hands should be done every time the attendant has contaminated his hands by contact with the infectious secretions from the patient or the things used by him.

If the person who cares for the sick must also attend to the wants of other members of the family, it is well for her to wear in the sick-room a wrapper or gown which she can slip off as she leaves the room.

But still more important it is for her to carefully wash her hands with soap and water before she touches anything to be used by others, the hands not to be wiped on a towel in the sick-room. Always keep in mind "hand-borne infection."

Disinfection.

As the infection of influenza is short-lived, no disinfection, particularly no fumigation, is required; but thorough cleansing, airing and sunning are desirable. Boiling only very briefly disinfects handkerchiefs and any other articles that can thus be treated.

Common Colds.

When one member of a family shows the first symptoms of a cold prompt and intelligent care should be taken to prevent the transmission of the infection to other members of the family. A common cold may be the precursor of bronchitis, pneumonia, or other acute respiratory disease, for a cold tends to lower that degree of resistance that one may have against these more serious diseases, the germs of which are present in the mouths, throats, nasal passages of many persons in health. They are lying in wait for the evil preparatory work which may be done by an attack of a cold or mild influenza.

The precautionary measures against the spread of the infection of a common cold or of these other acute diseases of the air passages are just those given in this circular for influenza.

Advice about Scarlet Fever.

ISSUED BY THE STATE DEPARTMENT OF HEALTH OF MAINE.

Scarlet fever, which is sometimes called scarlet rash or canker rash, is one of the dangerous contagious diseases. It is spread in several ways; (1) Directly from the sick person. (2) By things which have been infected by the sick one. (3) By eating or drinking something which has been infected by being handled or by having been near persons who have scarlet fever. (4) By some person who has been with the sick one.

Signs.

Fever, vomiting, sore throat; a bright red rash over the skin coming out in from 12 to 24 hours after the sickness begins; some weeks later the skin peels off in flakes or scales. In some mild cases there is only a slight sore throat with a rash which may not be noticed and the peeling of the skin is not very noticeable.

Dangers.

Many children die within a few days or a few weeks. Others die later of inflammation of the kidneys with dropsy or convulsions or from other diseases due to scarlet fever. Others are left weak and sickly for a long while or always, and often with running ears and deafness. Keep the disease away from your children if you possibly can. It is too dangerous for your little ones. If you can protect them until they are twelve years old or more, they will then not catch the disease so easily. Many persons have never had scarlet fever because they were kept away from it while they were small.

How to Protect Your Children.

Keep your children away from persons and places where scarlet fever is, and keep away yourself. Do not let anybody come into your home who has scarlet fever or who has been where it is until the board of health says they are all right. Look out for things which have come from homes where there has been scarlet fever. They may be infectious. Keep such things away from your children.

When scarlet fever is around, keep your children out of street cars, away from theatres or other places where children assemble; and be particularly careful to keep them away from children who are ailing or who have sore throats or a rash of any kind.

If Scarlet Fever Gets Into Your Home, What?

If one child in your family has scarlet fever, do everything you can to keep it away from the others. Put the sick child into a room by himself and have some good person there to take care of him. Keep the other children away. Do it quickly, just as soon as the child has a sore throat. If scarlet fever has been around, do not wait for the high fever and the rash, it is catching before that. If scarlet fever is not coming on, it may be that other dangerous disease, diphtheria.

Then send for the doctor early. He will tell you what to do to save the other children from the disease.

What Next?

Your second thought should be not to endanger other people's children. Be careful not to let anybody from your house carry the infection to other houses, or to school, or to church, or to other public places. The law provides a severe penalty for carelessness of that kind, but you want to do the right thing anyway, and to be careful to save your neighbor's child from the danger, just as you should demand that they do nothing to endanger your child.

What Then?

The next thing to do is promptly to notify the local board of health or have the doctor do it.

Rules for the Sick-room.

There are several things which should be kept in mind in preventing the spread of scarlet fever.

(1) If possible, have the sick one in a room by himself. Have all unnecessary things carried from the room before the sick one is carried there. Have good air in the room but avoid direct drafts. Many children lose their lives by getting out too soon after they have had scarlet fever even after the disease in a very mild form.

Another reason why the child should not get out too soon is that the scarlet fever child is infectious a long time. Many children after scarlet fever are dangerous to others for 30 days or longer.

(2) There is a special danger from everything which comes from the mouth or nose of the patient, or from discharges from the eyes or ears or from abscesses. All such matter should be received on pieces of cloth or soft paper and burned promptly.

(3) When the nurse must leave the sick-room she must be very careful not to carry infection. There is danger of carrying the infection in her clothing and on her hands. She must be very careful to wash and disinfect her hands when she leaves the room.

(4) Anything carried out of the room and packed away, clothing, toys, or anything else—may remain infected a long time. Everything must be disinfected before it goes from the room.

(5) Milk and some other foods are very easily infected if they are handled by persons who have scarlet fever or who have been near that disease.

(6) If the head of the family can and will keep strictly away from the sick-room and from all infectious persons and things, the board of health will try to give him as much liberty as possible in attending to his usual work.

(7) No child must return to school from the infected house until he receives a permit from the board of health.

Disinfection.

Promptly burn all worthless articles is the best way. Boiling for half an hour is sure for clothing or other things which can be boiled. Scalding with boiling water for spoons, forks, cups and other eating utensils will make them safe. Steaming in a tin wash-boiler for an hour after the water is actually boiling will do for clothing. The clothing must be supported above the water on a false bottom of board or lath and that on two bricks set on edge. Disinfect the hands with thorough washing with soap and water. Ask the local board of health for further information.

Work with the board of health for that which will be for the greatest good of all—the prevention of the spread of scarlet fever. Be honest, be square, and the board will help and favor you all it can.

L. D. BRISTOL, M. D.,
Commissioner of Health.

Dysentery and the Diarrheal Diseases.

State Department of Health of Maine.

Under the rules and regulations of the State Department of Health dysentery is put in the list of notifiable diseases. This is because of the, fact that it is an infectious disease dangerous to the public health. It is the duty of parents and householders, as well as of physicians, to report cases to the local boards of health so that the family may be helped to prevent the spread of the infection.

That which is true of dysentery is also true of the diarrheal diseases of children, particularly of those which are so prevalent during the summer months and which cause the death of many babies. The infectious matter is given off by the sick ones in the discharges from the bowels, and in some cases the sick continue to thus give off the infection for some time after they have apparently fully recovered.

It is also true that the indigestion which is the result of improper feeding has much to do with increasing the sickness-rate and the death-rate from the diarrheal diseases and in preparing the way for the infectious diarrheas. Every mother and every expectant mother should be supplied with a copy of Circular 271, Hints on Nursing the Baby, and Circular 272, How to Feed the Baby, issued by this Department.

How the Infection is Spread.

These infectious diarrheal diseases are spread just as typhoid fever is spread—particles of the infectious matter passed from the bowels find their way into the mouths and into the stomachs of other persons. An invisible trace of this infection may be enough to give the disease to another person.

These are some of the ways this infection may be spread: (1) The person caring for the sick soils her hands with the discharges from the patient. Unless she washes them thoroughly the invisible trace of the infectious matter remaining upon her fingers may be carried directly to her own mouth or may infect her own food or that of other persons. (2) The domestic well or other source of water supply may become polluted by the discharges being thrown out where a little of the infectious matter may find its way into the water by surface drainage or by soakage through the soil. (3) Flies, in their flight from the sick room or from privies or other places where the discharges have been thrown may carry the infection to the pantry or the table or other place where milk, cake, bread or other food may be; or flies may carry the infection directly to the lips of the sleeping babe.

Prevention.

For the prevention of the further spread of dysentery or infectious diarrhea after a case has occurred in a house, the following seven rules should be put into effect very promptly:

Rule 1. Care should be taken to limit, just so far as possible, the infection of things by the discharges from the bowels of persons suffering from dysentery, or from children who have this disease or infantile diarrhea. Clothing, bedding, furniture and floors should be saved from soiling. The utmost cleanliness should be the aim under this rule.

Rule 2. If by chance the clothing or bed-clothing become soiled, the unclean articles should be washed in soap and water and boiled as promptly as possible; and the soiled places on floors or furniture should be washed up with a disinfecting solution, or at least with soap and water.

Rule 3. All discharges from the bowels should be disinfected promptly and carefully, and this work of disinfection should be continued for some days after the patient has apparently fully recovered.

The disinfectant used may be Solution 8 of the State Department of Health, consisting of 4 tablespoonfuls of Kreso or Coro Noleum to the gallon of water, a quantity of it three or four times as large as that of the discharge to be disinfected and the infectious matter should be left exposed to the action of the disinfectant three or four hours. More than one chamber vessel will thus be needed.

Or, the vessel may receive boiling water, eight or ten times the bulk of the discharge. Keep from rapid cooling.

In the case of infants, the soiled diapers should be immersed promptly in a quantity of the disinfecting solution kept for that purpose in a tub or large crock.

Rule 4. In the final disposal of the discharges from the patient and of the water used in the washing of the diapers, there should be very great care not to throw them out where they might possibly pollute and infect wells springs, or other sources of drinking water.

Rule 5. Remember the great danger of carrying infection to the food and to the things used in serving food by invisible particles of infection upon the fingers, even after the hands have been washed, if the washing is not thoroughly done. The rule must therefore be that the mother, or nurse who cares for the sick one shall give her hands a careful and prolonged washing with soap and water if they have been soiled with the discharges, or other unclean matter, giving particular attention to the spaces under the finger nails.

Rule 6. With babies these infectious diarrheal diseases are much more likely to occur among those that are fed from the bottle. One reason for this is that there are so many chances for unclean matter and infection to be carried to the mouth of these children in the milk and milk-mixtures or by the nipples, bottles or other containers that are not kept strictly clean.

There must be constant care that milk all the way from the cow to the baby is kept clean. In the home, everything in which the milk is kept and everything used in making up the milk-mixtures and in feeding the baby must be kept as clean as soap and water and boiling can make them. (See Circular 272).

Rule 7. By means of screens, and otherwise, flies should be kept out of the home and particularly from the sick room, else they will carry infection to food from the sources of infection within the home or from privies outside. For lessening the prevalence of these diarrheal diseases and of typhoid fever, privy-vaults so built that flies cannot get into them should be insisted upon.

(i) There is no diagnostic laboratory in the town, and all cultures, pathological specimens, and Wasserman Tests, have to be sent to Augusta for interpretation.

(j) There are no free clinics in the town, or any organized social service. The district nursing has been taken up earlier in this article.

(k) In speaking of charitable organizations it is well to mention first the town farm, otherwise known as the poor farm. This is a home for aged unfortunates, and is maintained by an appropriation, which is voted in town meeting. The appropriation for the year just passed was \$6,500.00.

There is also a fund raised for the aid of "mothers." The mother's aid fund for the last year was \$1,500.00.

The churches all raise more or less money for local charity.

Various women's clubs in the town raise money in various ways for benevolent purposes. Among these may be mentioned, The Sunshine Society, The Philothia, and the Red Cross.

(l) There are no local laws dealing with food and drug administration.

SUMMARY.

SUMMARY

Conditions Found--Criticisms--Recommendations.

In making this sanitary survey it has been shown that the public health supervision of Monrovia is in many ways inadequate and faulty. It is very much easier to talk out an adequate health program for a community than it is to actually put such a program into execution. The work is new, and the vast majority of the population have no comprehension of the extent and value of such work. Adequate public health protection costs money, and times are hard. Infact when it comes to actually laying out money for ill understood projects times are allways hard. Consequently, it is first necessary to educate the public to an appreciation of the value of such work before much improvement can be hoped for. This necessarily takes time. It also requires someone with unselfish interest and guts to start things going.

In summarizing then I will simply outline some of the undesirable conditions found and make certain recommendations to improve the present state of public health work. More extensive criticism of the various activities has been made throughout the report.

Anti-tuberculosis and anti-venereal disease activities are not sufficiently stressed.

The disposal of sewage is carried on only during a few months in the summer, and is quite inefficient.

Many of the sewers empty into the river above the point from which the city water is drawn in the summer months. This is a flagrant offense against any pretense of sanitation.

These in brief are some of the undesirable conditions found, and give some idea of the inadequacy of the present health department.

The following recommendations are made:-

(1) The health department should be reorganized as was outlined early in this report.

(2) An appropriation should be made for public health work sufficient to make the above recommendation possible of fulfillment, and to finance the activities of such an organization. A yearly per capita expenditure of \$1.25 would be sufficient.

(3) Experienced engineers should be employed to devise either a new source of water supply which would be adequate for the town and of a quality satisfactory for all purposes, or to contrive facilities for artificially purifying the water now used, either by storage and filtration. The recommendations should be carried out, and the other sources of supply of questionable safety should be abolished.

(4) All sewers which empty into the river above the dam should be modified so that they would do so. The law requiring all persons along sewer lines to connect their houses with the same should be rigidly enforced. The sewer lines should be extended to take in the whole of the village. All sewers emptying into the various small streams should be abolished.

(5) The town dump should be moved to a greater distance from the village. Facilities for collecting and incinerating garbage should be provided for, in a manner sufficiently adequate to allow a weekly collection of the same.

(6) The local health officer should be empowered to license and renew licenses each year for all dairies and public kitchens, with additional frequent inspection of the same and the power to revoke licenses in cases where the conditions should become unsatisfactory.

(7) The health officer should take special measures to obtain the co-operation of physicians in reporting and controlling communicable disease.

(8) The schools should be inspected as recommended earlier in this report.

(9) The slaughter houses should be forbidden to operate until they have been put in a satisfactory sanitary condition, and until the operators shall have been sufficiently educated to practice intelligently a reasonable degree of sanitation.

(10) A more efficient campaign in public health education should be put into effect to stimulate the laaging

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